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DUST CONTROL IN MEASLES WARDS

WITH A NOTE ON SULPHADIAZINE PROPHYLAXIS

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Allison and Brown (1936) showed that haemolytic streptococci may spread in measles wards as a secondary transmissible infection superimposed on the primary virus-caused disease. Their findings were confirmed by Wright, Cruickshank, and Gunn (1944), who showed in addition that dust particles are possibly an important means of streptococcal carriage in measles wards. They found that the oiling of blankets, bed linen, garments, and floors in a measles ward resulted in a 98% reduction in the numbers of haemolytic streptococci in the air during bed-making, when compared with the numbers in the air of an unoiled control ward; and that the streptococcal cross-infection rate among the patients fell from 58.1% during a preliminary period with oiled floor alone to 18.6% when, in addition, oiled bed-clothes, garments, and ward linen were in use. The comparable cross-infection rates for the same periods in the unoiled ward were 53.3% and 73.3% respectively. The method of laundry oiling was described by Harwood, Powney, and Edwards (1944).

Research on the control of air-borne infection was stimulated during the recent war by the occurrence of respiratory infection among men in barracks and other establishments. British workers demonstrated a great increase in numbers of dust-borne streptococci and other bacteria in the air of Army quarters and hospital wards during bed-making and sweeping, and successfully controlled dust-spread bacteria by the application of dust-laying oils to textiles and floors (van den Ende *et al.*, 1940, 1941; van den Ende and Thomas, 1941; Thomas, 1941). American workers confirmed these observations and introduced new methods of oil application (Robertson *et al.*, 1944; Commissions on Acute Respiratory Diseases and on Air-borne Infections, 1946; Loosli *et al.*, 1946; Puck *et al.*, 1946). In field trials they secured evidence that oiling floors and blankets reduced the incidence of haemolytic streptococcal infection among troops (Commission on Air-borne Infections, to be published).

Scope of the Investigation

Although the good results of dust control in a measles ward recorded by Wright, Cruickshank, and Gunn (1944) appeared clear-cut, it is notoriously difficult to make strict comparisons between one hospital ward and another. It seemed important, therefore, to repeat the experiment during another measles epidemic and in another hospital. At the same time nursing techniques and other matters, the importance of which had emerged during the first experiment, were standardized so far as possible. The investigation was undertaken during 19 consecutive weeks in 1945 in two first-floor measles wards of identical size, design, and aspect. Each ward had a side-room for two cots. In the oiled ward (opened on Jan. 28 and closed on June 7) the following dust-suppressive measures were taken: The floor of the main ward, which was of wood, was treated with spindle oil immediately before the start of the investigation and monthly thereafter (the floor of the side-room, sanitary annexes, and passages could not be oiled, as they were of composition); all blankets, counterpanes, sheets, pillow-slips, patients' garments, towels, and staff gowns were treated with technical white oil immediately before the start of the investigation and thereafter at each laundering. The blankets of each patient were disinfected after his discharge or transfer from the ward and were washed and re-oiled every four weeks. During the first three weeks the oiling was undertaken at the laundry of the British Launderers' Research Association, and during the rest of the investigation in the hospital laundry. The method used was that described by Harwood, Powney, and Edwards (1944). In the unoiled ward (opened on Jan. 25 and closed on May 31) no measures were taken against dust-borne infection. The floors of this ward and its side-room and annexes were of composition. In each ward the total bacterial and haemolytic streptococcal content of the air, and the cross-infection and complication rate due to haemolytic streptococci, were studied throughout the investigation. A third ward for the study of sulphadiazine prophylaxis was opened on Feb. 14 and closed on May 19, 1945. Particulars and results of this part of the investigation are the subject of a separate section of this report.

Ward Arrangements

1. The bed complement of each ward, which was normally 18, was raised to 20 (8 cots and 12 beds) during the investigation. The bed-spacing was 12 ft. (366 cm.) between bed centres. The length of each ward was 100 ft. (30 m.), the width 27 ft. (823 cm.), and the height 15 ft. (457 cm.). The ventilation turnover (between 4.30 and 6 a.m.), estimated once only, was five to seven changes in an hour. Each ward had a side-room with two cots reserved for patients with middle-ear suppuration.

2. Measles patients were allocated in rotation to the main wards; measles patients admitted with middle-ear suppuration were allocated in rotation to the side-rooms.

3. Toys and books were forbidden in the wards.

4. Mattresses, pillows, and blankets of each bed were disinfected (5 lb. (2.27 kg.) pressure for 30 minutes) at the start of the investigation, and thereafter on the discharge or transfer of each patient.

5. Barrier nursing was adopted for all patients with the following complications: pneumonia, severe bronchitis, tonsillitis, skin infection, and middle-ear suppuration.

6. Patients with uncomplicated measles were discharged on their tenth day in hospital.

7. Swabs for nasal toilets were sterilized in dressing drums; nurses were instructed to use a "no-touch" technique and to wash their hands in a solution of "O-syl" between each nasal toilet.

8. Convalescent patients were restricted to their own bed area.

Routine Procedures

Air Sampling.—The bacterial content of the air was investigated by means of a slit sampler (Bourdillon, Lidwell, and Thomas, 1941). Air samples were taken once weekly in each ward during bed-making (5 to 6.30 a.m.) and during sweeping (8.30 to 9.30 a.m.). The slit sampler, on a trolley, was moved from one bed to the next as each in turn was made. During sweeping the machine remained at a fixed central point in the ward. The height of the slit, through which air was drawn at the rate of 1 cu. ft. (28.317 c.cm.) per minute, was 34.5 in. (87.6 cm.) from the floor. For measuring the total bacterial content of the air, blood agar plates were exposed in the slit sampler for one to three minutes and were incubated aerobically for 24 hours at 37° C. The number of bacterial colonies on each plate was counted, though on crowded plates only an approximate count could be made. For measuring the haemolytic streptococcal content of the air, gentian-violet blood agar plates were exposed in the slit sampler for 5 to 15 minutes. The number of colonies of haemolytic streptococci on each plate was counted after 24 hours' incubation aerobically at 37° C.

Cross-infection Criteria.—Swabs were taken from the nose and throat (and from the ear discharge, if any) of every patient immediately before admission to the wards, then once weekly and on the day of discharge or transfer. Nose and throat swabs were taken once weekly from the ward and laboratory staffs and from the medical officers. Swabs were plated on gentian-violet blood agar plates and incubated aerobically for 18 hours at 37° C. Cross-infection was judged to have occurred if a patient, between his third hospital day and the day of his discharge or transfer from the ward, was found to have in his upper respiratory tract haemolytic streptococci of Groups A, C, or G which were not present on the day of, or the day after, admission. It was intended to take swabs in the receiving-room from the skin lesions of all new patients, but this was not always practicable as some patients had multiple or crusted lesions.

Complication Rate.—A daily round of all patients in the three wards was made and any complication or rise of temperature noted. Appropriate swabs were taken, plated on gentian-violet blood agar, and investigated for the presence of haemolytic streptococci after 18 hours' incubation aerobically at 37° C.

Serological Investigation of Haemolytic Streptococci.—Representative colonial forms of haemolytic streptococci were picked from gentian-violet blood agar plates to blood broths, which, after 18 hours' incubation aerobically at 37° C., were stored in the refrigerator for subsequent serological examination. All haemolytic streptococci thus stored were tested for Lancefield group by the formamide method (Fuller, 1938). Group A streptococci were tested for serological type by the Griffith agglutination method. Strains which had been derived from patients and which failed to type by agglutination were tested by the precipitin typing method (Swift, Wilson, and Lancefield, 1943); so also were representative strains from a large number of Group A streptococci which gave agglutination reactions with type 13 and B3264 sera. Strains which failed to give satisfactory reactions were recorded as "type not found."

Results of Investigation

Air Sampling

Air samples were taken once weekly during bed-making and sweeping in each main ward and also in the side-room, if occupied. The results in the unoiled and the oiled wards are shown in Table I.

TABLE I.—*Counts of Total Bacteria and of Haemolytic Streptococci in the Air of the Unoiled and of the Oiled Ward during Bed-making*

Unoiled Ward			Oiled Ward		
Date (1945)	Total Bacterial Colonies (approx.) per 10 cu. ft. of Air	Total Haemolytic Streptococcal Colonies per 100 cu. ft. of Air	Date (1945)	Total Bacterial Colonies (approx.) per 10 cu. ft. of Air	Total Haemolytic Streptococcal Colonies per 100 cu. ft. of Air
1/2 ..	4,638	2	2/2 ..	137	0
8/2 ..	4,060	180	9/2 ..	175	0
15/2 ..	3,230	27	16/2 ..	312	6
22/2 ..	1,750	7	23/2 ..	158	8
1/3 ..	1,260	4	2/3 ..	220	4
8/3 ..	2,710	8	9/3 ..	301	2
15/3 ..	1,460	12	16/3 ..	144	0
22/3 ..	4,250	142	23/3 ..	376	0
29/3 ..	1,560	0	30/3 ..	83	0
5/4 ..	1,630	7	6/4 ..	233	0
12/4 ..	2,870	80	13/4 ..	120	0
19/4 ..	2,810	2	20/4 ..	137	3
26/4 ..	3,180	17	27/4 ..	41	0
3/5 ..	3,010	3	4/5 ..	193	0
10/5 ..	1,890	0	11/5 ..	389	0
17/5 ..	790	0	18/5 ..	145	3
24/5 ..	1,210	0	25/5 ..	94	0
Total	42,308	491	Total	3,258	26

1 cu. ft. = 28,317 c.cm.

The table shows that the reduction in the mean total bacterial count of the air of the oiled ward during bed-making was 92.3% when compared with the figure for the unoiled ward. This reduction indicates that the oiling of the bed-clothes, etc., was effective in controlling bacteria-carrying dust particles. A striking feature of the investigation was the comparatively low counts of haemolytic streptococci in the unoiled ward. Only on three occasions did the counts in the unoiled ward rise above a figure of 50 haemolytic streptococci per 100 cu. ft. (2.832 m.^{3}) of air, and in eleven of the seventeen morning samplings the counts were below 10 per 100 cu. ft. The two highest counts—180 and 142 haemolytic streptococci respectively—were largely accounted for by two plates; on one of these 91 streptococcal colonies were collected from 10 cu. ft. (0.28 m.^{3}) of air, and on the other 82 from 12 cu. ft. (0.34 m.^{3}). Both samplings had been taken from the surroundings of patients with numerous streptococci in the nose and throat. The reduction in the mean haemolytic streptococcal count during bed-making in the oiled ward was 94.7% when compared with the figure for the unoiled ward.

Table II shows the counts of total bacteria and haemolytic streptococci in the air of the unoiled and of the oiled ward during sweeping.

The table shows that the reduction in the mean total bacterial count of the air of the oiled ward during sweeping was 79.1%, when compared with the figure for the unoiled ward. The counts of aerial haemolytic streptococci obtained during sweeping showed the same irregularity as those obtained during bed-making. On the whole the sweeping counts were low; from ten of the seventeen morning samplings no haemolytic streptococci were isolated. One high count—150 per 100 cu. ft. of air—was obtained, this occurred on the morning on which a high count was obtained during bed-making and may have been explained

TABLE II.—*Counts of Total Bacteria and of Haemolytic Streptococci in the Air of the Unoiled and of the Oiled Ward during Sweeping*

Unoiled Ward			Oiled Ward		
Date (1945)	Total Bacterial Colonies (approx.) per 10 cu. ft. of Air	Total Haemolytic Streptococcal Colonies per 100 cu. ft. of Air	Date (1945)	Total Bacterial Colonies (approx.) per 10 cu. ft. of Air	Total Haemolytic Streptococcal Colonies per 100 cu. ft. of Air
1/2 ..	1,315	0	2/2 ..	125	0
8/2 ..	2,640	150	9/2 ..	180	0
15/2 ..	4,035	47	16/2 ..	480	0
22/2 ..	1,515	5	23/2 ..	200	0
1/3 ..	1,410	0	2/3 ..	455	0
8/3 ..	1,505	0	9/3 ..	390	0
15/3 ..	1,150	0	16/3 ..	155	5
22/3 ..	1,695	5	23/3 ..	505	0
29/3 ..	805	0	30/3 ..	175	0
5/4 ..	1,075	5	6/4 ..	213	0
12/4 ..	1,445	25	13/4 ..	545	0
19/4 ..	475	5	20/4 ..	500	5
26/4 ..	1,380	0	27/4 ..	480	0
3/5 ..	1,520	0	4/5 ..	230	0
10/5 ..	795	0	11/5 ..	230	0
17/5 ..	890	0	18/5 ..	210	0
24/5 ..	1,065	0	25/5 ..	95	0
Total	24,715	242	Total	5,168	10

by the disturbance for nursing purposes of the bed of a heavy carrier during the sweeping. The reduction in the mean haemolytic streptococcal count during sweeping in the oiled ward, when compared with the figure for the unoiled ward, was 95.9%.

Table III shows the counts of total bacteria and haemolytic streptococci in the air of the side-rooms of the unoiled and oiled wards during bed-making and sweeping. In this connexion it should be recalled that the floors of both side-rooms were of composition and that therefore the side-room attached to the main oiled ward could not be treated with spindle oil. Air samples were taken from the side-rooms only when they were occupied; this accounts for the absence of readings in some weeks.

TABLE III.—*Counts of Total Bacteria and of Haemolytic Streptococci in the Air during Bed-making and Sweeping in the Side-rooms of the Unoiled and Oiled Wards*

Date (1945)	Total Bacterial Colonies (approx.) per 10 cu. ft. of Air		Total Haemolytic Streptococcal Colonies per 100 cu. ft. of Air	
	Bed-making	Sweeping	Bed-making	Sweeping
		Unoiled Ward		
8/2	—	4,490	—	0
15/2	10.000	3,060	0	40
22/2	10.000	920	13	0
1/3	10.000	2,430	20	0
8/3	10.000	—	0	0
15/3	2.100	620	0	0
22/3	2,340	1,400	0	20
29/3	3,200	2,270	75	0
5/4	2.180	1,170	10	20
12/4	1,630	2,100	38	60
19/4	270	670	20	40
10/5	2.930	540	0	0
17/5	4,000	680	0	0
Total ..	58.650	20,350	176	180
Average per sample	4,888	1,696	14·7	13·8
		Oiled Ward		
9/2	—	210	0	0
23/2	595	1,210	0	30
2/3	230	550	40	0
9/3	300	640	0	0
16/3	300	350	0	0
23/3	180	610	0	0
30/3	280	420	20	0
13/4	210	115	0	0
20/4	150	360	0	0
27/4	60	1,170	0	0
4/5	220	100	0	0
11/5	130	140	0	0
18/5	210	490	0	0
25/5	100	80	0	0
1/6	130	440	30	0
Total ..	3,095	6,885	90	30
Average per sample	221	459	6	2

The reduction in the mean total bacterial count in the air of the side-room of the oiled ward was during bed-making 95.5% and during sweeping 72.9%. Corresponding reductions in the mean haemolytic streptococcal counts were 59.2% and 85.5%. Patients with heavy streptococcal infections of the upper respiratory tract were being nursed in the side-room of the oiled ward on the three occasions when haemolytic streptococci were recovered from the air during bed-making. It is possible that some of these streptococci resulted from droplets, as the children were apt to cough in the early morning; alternatively, some may have arisen from the dressings applied to their ears.

Eighty-one colonies of haemolytic streptococci isolated from the air of the unoiled ward were tested serologically. Of these, 79 belonged to Group A, one to Group C, and one to Group G. Of the Group A strains, 1 was type 1; 3, type 11; 3, type 11/28; 1, type 12; 8, type 25; 3, type "impetigo 19"; and 60, "type not found." Twenty-seven colonies of haemolytic streptococci from the oiled ward were tested; of these, 23 belonged to Group A and 4 to Group G. Of the Group A strains, 1 was type 4/24; 1, type 6; 14, type 12; 1, type 25; and 6, "type not found."

Cross-infection Incidence

During the course of the investigation 186 measles patients were nursed in the unoiled ward. Of these, 23 became cross-infected in the upper respiratory tract with Group A, C, or G streptococci, giving a cross-infection incidence of 12.4%. Serological examination of the cross-infecting strains yielded the following results: 15, Group A (1, type 2; 1, type 4/24/29; 4, type 12; 2, type 25; 1, type 27; 1, type 29; and 5, "type not found"); 3, Group C; and 5, Group G. In 20 of the cross-infected patients the streptococcus was first isolated from the throat, in 1 from the nose and throat, in 1 from the nose, and in 1 from the ear. Ten of the cross-infections were first discovered in the swabs taken on the day of the patient's discharge from hospital.

In the oiled ward 190 measles patients were nursed. Of these, 39 became cross-infected in the upper respiratory tract with Group A, C, or G streptococci, giving an incidence of 20.5%. Serological examination of the cross-infecting streptococci yielded the following results: 33, Group A (1, type 2; 4, type 4/24/29; 1, type 6; 1, type 11; 1, type 11/27/28; 12, type 12; 1, type 14/R491; 1, type 22; 3, type 25; 1, type 29; 2, type "impetigo 19"; 5, "type not found"); 4, Group C; and 4, Group G. Double cross-infections with different serological types occurred in two patients. In 26 of the patients the cross-infecting streptococcus was first isolated from the throat, in 7 from the nose and throat, in 5 from the nose, and in 1 from the ear. Eleven of the cross-infections were first discovered in the swabs taken on the day of the patient's discharge from hospital. One small outbreak of type 12 streptococcal infection occurred in the oiled ward. The first cross-infection was discovered on Feb. 6. Possible sources of infection were a child admitted to the adjacent cot with type 12 streptococci in his upper respiratory tract, and a nurse who developed type 12 streptococcal tonsillitis on the day on which the ward was opened. By the following week three other children had become cross-infected with type 12 streptococci, and by the following week three more children and one nurse.

Complication Rate

None of the 186 patients in the unoiled ward developed middle-ear suppuration definitely attributable to streptococcal cross-infection. One child, admitted with non-streptococcal otorrhoea, acquired a Group G streptococcus in the ear discharge. Another child, admitted with Group

A streptococci in the nose and throat, developed left otorrhoea due to Group A streptococci; since all the streptococci isolated from this patient failed to type, it was not possible to decide whether the otorrhoea was or was not due to cross-infection. Two patients in the unoiled ward developed "late" middle-ear suppuration due to pneumococci.

Of the 190 patients admitted to the oiled ward, only one case of "late" middle-ear suppuration (that is, occurring on or after the sixth hospital day) could be attributed to streptococcal cross-infection (Group A, type 12). One other child in this ward developed "late" otorrhoea, also due to type 12 streptococci, but she was a throat carrier of this type on admission.

Other complications among patients after admission were also few. Those which might possibly have been due to cross-infection were as follows: In the unoiled ward: mild conjunctivitis, Group A, "type not found"; follicular tonsillitis, Group G, type 25. In the oiled ward—fissure in angle of mouth, Group A, "type not found"; tonsillar plugs, Group C; fissure of lip, Group A, type 12; fissure of lips and cervical adenitis, Group A, type 12.

Sources and Spread of Infection among Patients

1. Unoiled Ward

(*a*) *Carrier Rate on Admission.*—Over the whole period of the investigation the carrier rate of haemolytic streptococci in the nose and/or throat of patients on admission was 19.7%. Of the 37 streptococcal strains, 26 were Group A (1, type 1; 2, type 2; 6, type 4/24/29; 1, type 8; 1, type 11; 3, type 12; 2, type 25; 1, type 27; and 9, "type not found"); 7, Group C; and 4, Group G.

(*b*) *Heavy Nasal Carriers.*—Hamburger, Green and Hamburger (1945) stated that patients with heavy streptococcal infection of the nose are more liable than others to contaminate their surroundings and should therefore be regarded as "dangerous" carriers. In this investigation it was found that, among the 186 patients nursed in the unoiled ward, only 9 were heavy nasal carriers of haemolytic streptococci; this may possibly account for the comparatively small numbers of haemolytic streptococci found in the air.

(*c*) *Middle-ear Suppuration.*—Seven patients with middle-ear suppuration were admitted direct to the side-room of the unoiled ward. Only one of these infections was due to streptococci (Group C). One patient was removed from the main ward to the side-room on the development of otorrhoea due to streptococci (Group A, "type not found"), and two on the development of pneumococcal otorrhoea.

2. Oiled Ward

(*a*) *Carrier Rate on Admission.*—The carrier rate of haemolytic streptococci in the nose and/or throat of patients on admission was 20.5%. Of the 40 streptococcal strains, 30 were Group A (1, type 2; 1, type 4/24/29; 1, type 6; 3, type 11; 6, type 12; 1, type 14; 1, type 24; 2, type 25; 1, type 27; 1, type 29; 2, type "impetigo 19"; 10, "type not found"); 9, Group C; and 1, Group G.

(*b*) *Heavy Nasal Carriers.*—Of the 190 patients who were nursed in the ward, only 11 were heavy nasal carriers of haemolytic streptococci.

(*c*) *Middle-ear Suppuration.*—Eleven patients with middle-ear suppuration were admitted direct to the side-room of the oiled ward. Five of these children were infected with haemolytic streptococci (Group A: 1, type 6; 1, type 24; 1, type 29; 1, "type not found"; and 1, Group C). One of these patients was found not to be suffering from measles and was removed from the ward after 24 hours. Two patients who developed streptococcal otorrhoea (Group A, type 12) were removed to the side-room from the main ward.

Sources and Spread of Infection among Staff

1. *Unoiled Ward.*—Haemolytic streptococci were isolated from the upper respiratory tract of 6 of the 32 nurses or domestic helpers (18.8%) who worked in the ward during the course of the investigation. The distribution of the streptococci was as follows: Group A: 1, type 4/24/29; 1, type 11; 1, type 25; 3, "type not found." In addition, one nurse suffered from a septic finger due to Group A, type 25, streptococci and was taken off duty.

2. *Oiled Ward.*—Haemolytic streptococci were isolated from the upper respiratory tract of 8 of the 31 nurses or domestic helpers (25.8%) during the course of the investigation. The distribution of the streptococci was as follows: Group A: 2, type 2; 2, type 12; 1, type 12 and "impetigo 19"; 1, type 27; and 2, "type not found." One of these nurses developed a type 12 streptococcal tonsillitis and was taken off duty.

3. *Medical and Laboratory Staff.*—Of the ten members of the medical and laboratory staff who visited the wards, two were intermittent carriers of streptococci (1 Group A, "type not found," and 1 Group A, type 25), and 1 had streptococci (Group A, type 1) in the throat on two occasions.

Skin Conditions

If we include in the category of skin sepsis not only obvious sepsis such as impetigo, boils, etc., but also skin lesions which are commonly secondarily infected, such as burns, infantile eczema, seborrhoeic dermatitis, and so on, we find that the distribution of cases was not equal between the two wards. In the oiled ward 26 children had skin sepsis on admission and 15 developed lesions subsequent to admission. In the unoiled ward the corresponding figures were 14 and 16. This may have some importance in the subsequent interpretation of results, since the bacteriological cross-infection rate for all children with skin sepsis on admission was 27.5%, which is higher than the mean of 16.5% for all cases in both wards. Individual examples presented themselves during the study which showed that respiratory infection was probably due to auto-inoculation from a skin lesion. (*Example*: J. B., aged 2 years; when admitted on April 6, 1945, the nose and throat swabs contained no haemolytic streptococci, but an impetiginous lesion had numerous type 25 streptococci. On April 12 the nose and throat swabs had a fair number of type 25 streptococci.)

The view has been expressed that the oiling of bed-clothes is not free from drawbacks, as some of the oils are dermatitic (Mitman, 1945). Our experience was that among 190 patients nursed in oiled bed-clothes and garments, only 5 (2.6%) showed any evidence of skin irritation. This was mild and ceased immediately on discontinuing to wear an oiled vest. Attempts to incriminate the dermatitic element in the emulsion failed because, apart from these few cases early in the experiment, skin irritation neither appeared naturally nor could be produced artificially by the prolonged wearing of garments impregnated with various types of emulsion. It must be remembered that during the war high degrees of purity, particularly of the emulsifying agents, could not always be attained by the manufacturers. Given reasonable standards in this respect, our experience of this particular oiling method indicates that the risk of skin irritation is negligible. If any anxiety is felt on this account it may be dismissed by omitting the oiling of the inner garments such as vests which by themselves cannot contribute much to the risk of dust-borne infection.

Clinical Severity

The investigation started in late January, during a spell of cold weather which was followed by a mild late winter and spring. Some of the patients admitted early in the period were acutely ill and presented the usual diagnostic difficulty between severe uncomplicated measles and early bronchopneumonia. This phase lasted for only two to three weeks. Six patients in the oiled ward and five in the unoiled ward suffered from bronchopneumonia. In the oiled ward 65 of the 190 patients received sulphonamide therapy, and in the unoiled ward 58 of the 186 patients; with few exceptions the drug used was sulphadiazine. Taken over the whole period of the investigation the patients were only mildly ill, and, latterly, very few seriously ill patients were seen. It should be noted, too, that throughout the investigation there were close restrictions on measles admissions in London, the aim being to admit to hospital only on account of severity of attack or of poor home conditions.

During the period of the investigation 151 measles patients were nursed in wards other than those used for the dust-control work. Of these, 130 were allocated to a chemoprophylaxis study ward which is the subject of a separate report; the remaining 21 were housed elsewhere in the hospital for the following reasons: 14 were male patients over the age of 7 years, 3 were convalescent on admission, 3 had both pertussis and measles, and in 1 the diagnosis was in doubt. None of these patients had middle-ear suppuration either on or after admission; two had bronchopneumonia.

Discussion

Detailed bacteriological investigation was made in two measles wards at the North-Western Hospital during the 1943 epidemic. In both wards secondary type 6 streptococcal outbreaks occurred and resulted in high cross-infection and middle-ear suppuration rates. In the air of the unoiled ward an average count of 253 haemolytic streptococci per 100 cu. ft. (2.832 m.³) was obtained during bed-making. In the oiled ward aerial streptococci during bed-making were 98% less and during sweeping 99% less than in the unoiled ward. The use of dust-control measures was coincident with a fall in the rate of type 6 streptococcal cross-infection from 58.1% to 18.6% and of middle-ear suppuration (due to this cross-infection) from 18.4 to 2.8% (Wright, Cruickshank, and Gunn, 1944; Wright, 1945). At the Eastern Hospital in 1943 a high incidence of "late" middle-ear suppuration—21%—was also found. Bacteriological investigations were not made, but it may be reasonably supposed that the high otorrhoea rate was due to secondary streptococcal infection and that the ward epidemiology was in fact similar to that of the North-Western Hospital.

The most striking feature of the 1945 investigation at the Eastern Hospital lay in the unoiled ward, which had a comparatively low cross-infection rate (12.4%), no cases of middle-ear suppuration due to streptococcal cross-infection, and a low streptococcal content of the ward air. Aerial streptococci in this ward, even including two plates with high counts, yielded an average content during bed-making of only 29 haemolytic streptococci per 100 cu. ft. of air; on four occasions no haemolytic streptococci were isolated from the ward air during the bed-making period; and on seven other occasions counts of less than 10 per 100 cu. ft. were obtained. The unoiled ward therefore failed to fulfil its function of supplying a yardstick against which possible benefits of dust control in the oiled ward could be measured.

Several other differences were noted between the results of the investigation in 1943 at the North-Western Hospital and in 1945 at the Eastern Hospital. With few exceptions the cross-infections in 1943 were due to type 6 streptococci. Mass invasion with this type occurred, as shown both in the number of patients infected and in the abundance of the streptococci yielded from the swabs. In 1945, 11 serological types of Group A and also Groups C and G streptococci were responsible for the cross-infections. Heavy streptococcal growth was obtained in 1943 from 72% of the cross-infected patients, whereas in 1945 only 25% of the cross-infections were heavy invasions and 42% were scanty. The degree of nasal cross-infection also differed. In 1943, 60% of the cross-infections resulted in a heavy streptococcal infection of the nose, while in 1945 only 8% were of the heavy nasal type.

The streptococcal cross-infection rates among patients in the unoiled and the oiled ward in 1945 were 12.4% and 20.5% respectively. Both wards had therefore a comparatively low cross-infection rate of the same order as the 18.6% rate which was regarded as satisfactory for the oiled ward in the 1943 investigation. The low degree of aerial contamination by streptococci in both wards suggests that the cross-infections were caused by a type of spread which was not air-borne. Possibly they were due to contact infection, for which there is ample opportunity in the catarrhal stage of measles. The fact that cross-infections of this type were more numerous in the oiled than in the unoiled ward could not be explained. Undetected differences in nursing technique in the two wards were a possible cause, since in field trials of this type an unavoidable variable between the experimental and the control ward lies in their different nursing staffs. In spite of careful alternate allocation of patients to the wards, two factors acting unfavourably to the oiled ward were observed: (*a*) it had a higher admission rate of type 12 streptococci—the only streptococcal type which showed signs of "communicability" and "virulence"; and (*b*) it had a higher admission rate of skin sepsis and streptococcal otorrhoea cases.

Complications due to streptococcal cross-infection were exceedingly few in 1945. Only one patient out of a total of 376 nursed in the two wards developed "late" middle-ear suppuration definitely attributable to streptococcal cross-infection—an incidence of 0.27%. The safety of the measles wards of 1945 contrasted strongly with the risks in 1943, when one in every five patients contracted middle-ear suppuration. It is evident that conditions favourable to the spread of streptococci in measles wards vary considerably from one epidemic year to another. The results of the 1945 investigation need in no way discourage further trials of dust suppression by oiling. It is possible that the unfavourable conditions of 1943 may recur in subsequent measles epidemics; in such an event the introduction of dust control may again assume importance as a measure in preventing cross-infection.

Summary

An investigation into the control of dust-borne haemolytic streptococci was carried out in two identical measles wards at the Eastern Hospital for a period of 19 weeks in the spring of 1945. In one, the oiled ward, all bed-clothes, patients' garments, and ward linen were treated in the hospital laundry with technical white oil, and the floor of the main ward was oiled. In the unoiled ward no anti-dust measures were taken. In both wards the air was sampled for total bacteria and for haemolytic streptococci during bed-making and sweeping, and the streptococcal cross-infection and complication rates were recorded.

The oiling methods were successful in suppressing dust-borne bacteria. This was shown by the fact that the mean total bacterial count was reduced, when compared with the count for the unoiled ward, by 92.3% during bed-making and by 79.1% during sweeping. Counts of aerial haemolytic strepto-

cocci in the unoiled ward varied considerably from week to week and in general were of a low order. On three occasions comparatively high counts were obtained: 180, 142, and 80 streptococci per 100 cu. ft. (2.832 m.³). On four occasions, however, no haemolytic streptococci were collected during a complete bed-making round, and on seven other occasions the count was below 10 per 100 cu. ft. The same irregularity of aerial contamination by haemolytic streptococci was found during sweeping.

The cross-infection rate among 186 measles patients nursed in the unoiled ward was 12.4%, and among 190 patients in the oiled ward, 20.5%. These cross-infections, the rates of which were comparatively low for such a highly susceptible group as measles patients, appeared to be due to contact rather than to air-borne infection. The fact that this type of cross-infection was higher in the oiled than in the unoiled ward was unexplained. The complication rate due to streptococcal cross-infection was exceedingly low; only one case of streptococcal otorrhoea due to cross-infection occurred among the total of 376 patients nursed in the two wards, making an incidence of 0.27%.

Striking differences were found from the results recorded in an earlier and similar investigation at the North-Western Hospital in 1943. In the unoiled ward there a high haemolytic streptococcal count was found in the ward air, and secondary type 6 streptococcal spread caused a cross-infection rate of 72% and a "late" middle-ear suppuration rate of 18.5%. In the unoiled ward of the 1945 investigation at the Eastern Hospital the streptococcal content of the air was in general low, the cross-infection rate was 12.4%, and no case of "late" middle-ear suppuration due to streptococcal cross-infection occurred. The unoiled ward in 1945 therefore failed in its function of acting as an adequate control ward against which possible benefits of dust control by oiling could be measured.

It is evident that conditions favourable to secondary streptococcal epidemics in measles wards vary considerably from year to year. The results of the investigation at the Eastern Hospital in 1945 should in no way discourage further trials of dust control by oiling. Should the unfavourable conditions of 1943 recur in consequent measles epidemics, dust-suppressive measures may again assume importance in the control of cross-infection.

SULPHADIAZINE PROPHYLAXIS IN MEASLES

Large-scale studies of sulphadiazine prophylaxis of respiratory infections in the United States Navy during the war years (Coburn, 1944) encouraged an attempt to evaluate chemoprophylaxis of streptococcal cross-infection in measles. For this purpose a third study ward was set up, as has been mentioned in the main report on the dust-control investigation. The hope of thereby comparing cross-infection rates among patients having sulphadiazine prophylaxis with those in the control ward was prevented by differences, some unforeseen and some unavoidable, between the two wards. The sulphadiazine patients had to be nursed in a ground-floor ward with blast-protected windows, whereas the control ward was on the first floor and had unprotected windows. The sulphadiazine ward could not be opened until three weeks after the control ward and was closed two weeks earlier. Also, owing to an oversight due to changes of staff, discharge swabs from 17 of the 130 sulphadiazine patients were omitted. A further difficulty in comparison arose because nearly one-third of the patients in the control ward received sulphonamides therapeutically. For these reasons the results must be regarded as quite inconclusive, but they are briefly described here, since they include evidence on sulphonamide levels attainable with small doses of the drug.

The ward regimen was as follows: Sulphadiazine was given to all patients, the daily dose being: 0–2 years of age, 0.25 g.; 3–9 years, 0.50 g.; 10–16 years, 0.75 g.; over 17 years, 1 g. The first dose was given soon after admission, and subsequent doses between 9 and 10 a.m. daily, up to and including the day of discharge. From 18 patients blood samples were taken 24 hours after the daily dose and were estimated for sulphadiazine content. The three samples from the 0–2 years group contained 2, 1.9, and 1 mg. per 100 ml. of blood; the eleven from the 3–9 years group contained a mean of 1.95, with a range from 4.3 to 0.6 mg. per ml. of blood; the two from the 10–16 years group, 3 and 1.2 mg.; and the two from the over 17 years group 2.5 and 2.7 mg.

The following results were recorded for the ward:

Air Sampling.—During bed-making the mean total bacterial count was 3,880 and during sweeping 1,570 per 10 cu. ft. (0.28 m.³) of air (2,360 and 1,230 respectively per 10 cu. ft. in the control ward). During bed-making the mean haemolytic streptococcal count was 3.7 and during sweeping 1.6 per 100 cu. ft. (2.832 m.³) of air (28.9 and 14.2 respectively per 100 cu. ft. in the control ward).

Cross-infection Rate.—Of the 130 patients admitted to the ward, 13 (10%) became cross-infected with Group A streptococci (1, type 1; 2, type 4/24/29; 1, type 11/28; 1, type 12; 1, type 22; 1, type 25; and 6, "type not found"). None was cross-infected with Group C or G streptococci.

Complication Rate. — None of the patients developed otorrhoea or other complications attributable to streptococcal cross-infection.

Sources and Spread of Streptococcal Infection

Among Patients.—(a) Carrier Rate on Admission: The carrier rate of haemolytic streptococci (Groups A, C, or G) among patients on admission was 10.8%. Of the 14 strains isolated, 12 were Group A (3, type 4/24/29; one, type 11; 1, type 12; 3, type 22; 2, type 25; 2, "type not found"); 1, Group C; and 1, Group G.

(b) Heavy Nasal Carriers: Only three of the 130 patients were heavy nasal carriers of haemolytic streptococci.

(c) Middle-ear Suppuration: Five patients were admitted to the side room with middle-ear suppuration, one only of which was due to streptococci (Group A, type 11).

Among Staff.—Haemolytic streptococci (Group A, types 11 and 12) were isolated from only two of the 27 nurses and domestic helpers who worked in the ward during the investigation. The type 12 streptococcus was isolated from a domestic worker with tonsillitis.

Skin Infections

Eleven children in this ward had skin sepsis on admission, in contrast to 14 in the control ward. It is interesting to note, however, that in the three study wards—the sulphadiazine ward, the oiled ward, and the control ward—the numbers of children admitted with frank impetiginous lesions were 8, 9, and 6 respectively, and that these gave rise to 4 secondary cases of impetigo in the sulphadiazine ward, 1 in the oiled ward, and 1 in the control ward. The four secondary cases in the sulphadiazine ward were of the bullous type and occurred as an explosive little outbreak, which suggested that sulphadiazine in these doses has very doubtful prophylactic value against the spread of this form of skin sepsis.

Toxic Effects

No toxic effects were noted. In this connexion it must be emphasized that, owing to the general mildness of the measles attacks in the whole period of the study and the particular absence of complications in the ward, the period of in-patient treatment and hence the sulphadiazine administration was short. Most patients were discharged on their tenth day in hospital, and the longest stay of any patient was 31 days.

Summary

The complete absence of complications attributable to streptococcal cross-infection in the sulphadiazine ward and the low bacteriological cross-infection rate justify a further attempt to evaluate the difficult question of sulphonamide prophylaxis in measles. No other significance should be attached to the results of this study.

The daily ingestion of 1 g. of sulphadiazine with downward adjustments for age to 0.25 g. attained minimum and maximum blood concentrations of 0.6 and 4.3 mg. per 100 ml. respectively, in samples taken 24 hours after administration.

In these doses, given normally over a period of 10 days and in no case in excess of 31 days, no toxic effects from sulphadiazine were encountered in the 130 patients studied.

We express our thanks and indebtedness for all the help given by the Matron, Miss E. M. G. Barcham, by the Sisters of the wards, Miss E. M. Walton, Miss M. S. Jennings, and Miss R. E. Lenton, by the nursing staff of the wards and the receiving-room, and by the laundry superintendent, Miss E. Dudley, and her staff. We thank Mr. F. Courtney Harwood and his staff of the British Launderers' Research Association for their supervision of the laundry oiling: Dr. A. B. Rosher and Dr. J. P. Kennedy for their help and encouragement; Dr. E. Hardy for making the sulphadiazine estimations; Dr. S. D. Elliott for the use of precipitin typing sera; Dr. O. M. Lidwell and Dr. J. E. Lovelock for measuring the ventilation rates of the wards; and the Medical Research Council for a personal grant to one of us (J. W.).

REFERENCES

Allison, V. D., and Brown, W. A. (1936). Ann. Rep. C.M.O., Ministry of Health, Appendix A, London.
Bourdillon, R. B., Lidwell, O. M., and Thomas, J. C. (1941). *J. Hyg.*, Camb., **41**, 197.
Coburn, A. F. (1944). *J. Amer. med. Ass.*, **126**, 88.
Commission on Acute Respiratory Diseases and Commission on Air-borne Infections (1946). *Amer. J. Hyg.*, **43**, 120.
Fuller, A. T. (1938). *Brit. J. exp. Path.*, **19**, 130.
Hamburger, M., Green, M. J., and Hamburger, V. G. (1945). *J. infect. Dis.*, **77**, 96.
Harwood, F. C., Powney, J., and Edwards, C. W. (1944). *British Medical Journal*, **1**, 615.
Loosli, C. G., Wise, H., Lemon, H. M., Puck, T. T., and Robertson, O. H. (1946). *Amer. J. Hyg.*, **43**, 105.
Mitman, M. (1945). *British Medical Journal*, **1**, 71.
Puck, T. T., Robertson, O. M., Wise, H., Loosli, C. G., and Lemon, H. M. (1946). *Amer. J. Hyg.*, **43**, 91.
Robertson, O. H., Hamburger, M., jun., Loosli, C. G., Puck, T. T., Lemon, H. M., and Wise, H. (1944). *J. Amer. med. Ass.*, **126**, 993.
Swift, H. F., Wilson, A. T., and Lancefield, R. C. (1943). *J. exp. Med.*, **78**, 127.
Thomas, J. C. (1941). *Lancet*, **2**, 123.
van den Ende, M., Edward, D. G. ff., and Lush, D. (1941). Ibid., **1**, 716.
—— Lush, D., and Edward, D. G. ff. (1940). Ibid., **2**, 133.
—— and Thomas, J. C. (1941). Ibid., **2**, 755.
Wright, J. (1945). *British Medical Journal*, **1**, 285.
—— Cruickshank, R., and Gunn, W. (1944). Ibid., **1**, 611.

ADRENALECTOMY IN MENTAL DISORDER

BY

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Although the endocrines have been largely employed in the practice of psychiatry, on the whole little progress has yet been made towards either improving the patients by their use or elucidating a relationship between glandular disturbances and mental disorders. Moreover, few of the diseases of the endocrine glands or the operative procedures connected with their relief have thrown any definite light on the relationship between psychiatry and endocrinology. At least seven cases of amelioration of mental symptoms following unilateral adrenalectomy have been reported (Allen *et al.*, 1939; Allen and Broster, 1945; Greene, Paterson, and Pile, 1945). It would seem equally important to describe two cases with well-marked mental abnormalities associated with characteristic glandular changes which were unimproved by this operation, whilst other findings of some interest have emerged from the investigations.

Case 1

A 44-year-old single woman was admitted to hospital in December, 1945. She was in an extremely neglected bodily state, and prior to her admission she was treated by the authorities as a person wandering at large. No history was available, and she was unable to give any details of her previous life until after the operation. She was completely apathetic, dull, retarded, and disinterested. Although she answered questions, her replies were monosyllabic and hardly relevant. During the time she was in hospital before the operation she remained apathetic, and she either did not properly appreciate her position or was completely indifferent to it. It appeared that she had some intellectual impairment and at times a mild clouding of consciousness. Her physical state approximated closely to that described by Broster as "adrenal virilism," because it seems to have arisen in adult life many years after the development of menstruation and the female secondary sexual characteristics. She was a well-built woman, muscular rather than obese. The outstanding abnormality in the secondary sex characters was that the hair growth was male in distribution. The whole of the beard area—lip, chin, lower cheeks, and pre-auricular region—was covered with long coarse hair, the pubic hair extended up to the umbilicus, the thighs were hairy to a very marked degree. The hirsuties had been noticed for three or four years. The blood pressure was not raised: 135–125/95–75. Menstruation had ceased for about two years. The history suggests that the abnormality of suprarenal cortical function did not occur until about the age of 40, so that it was not surprising to find well-developed breasts and a female relationship between the respective widths of the pelvic and pectoral girdles. Preoperatively her urinary steroids measured as androsterone were 60 mg. in 24 hours (normal 9–12 mg.). Her blood sugar (Fig. 1, curve A) showed a flat curve of the pituitary

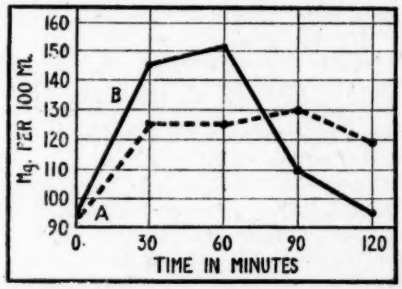

FIG. 1.—Case 1. Blood-sugar curve before operation, A, and after operation, B.

type as found in Broster and Vines's polyglandular type 3. The blood sedimentation rate fell 8 mm. in the first hour (200 mm. Westergren column). The differential blood count, blood cholesterol, urea, and serum chlorides were within normal limits. Intravenous pyelography did not give any indication of unilateral suprarenal enlargement, and therefore laparotomy was performed in April, 1946. The right suprarenal was much larger than the left. Examination revealed a normal development of the female pelvic organs. When, two days before the adrenalectomy, she was told that she was to have an operation in order to lose all her hair growth, the only remark she made was: "Rather far-fetched to operate on the tummy to lose hair on my face." Then she sank back into her apathetic condition again.

In May, 1946, right adrenalectomy was performed by Bernard Fey's costo-abdominal approach, which gave an excellent exposure of the suprarenal. Briefly, in the Bernard Fey approach an incision is made along the upper border of the eleventh rib to the tip and continued thence towards the anterior iliac spine in the line of the fibres of the external oblique. The eleventh rib is freed subperiosteally and displaced downwards. The posterior periosteum is incised, the common origin of the diaphragm and transversalis abdominis muscle divided near the tip of the rib, and the transversalis split in the direction of its fibres. This exposes the upper pole of the kidney and leads direct to the suprarenal. Mouat (1939) wrote: "I can find no record of Fey's costo-abdominal route having been used for operations other than those on the kidney and ureter, but inspection of the surrounding structures during operation, and my experience of it in the dissecting-room, lead me to suggest that this route might with advantage be used for operations on the adrenals or for repair from below of the hiatus in diaphragmatic hernia." Since 1939 Mr. John Everidge has strongly recommended to one of us (E. J. R. S.) the use of this route for operations on the suprarenal, and whatever its role may be in renal surgery it does appear to

give an ideal approach to structures superior to the kidney on either side of the body.

The operation was performed without difficulty and the blood loss was small. The patient's pulse was of good volume and between 80 and 90 a minute until the suprarenal was handled while being freed from its surrounding structures. The rate then suddenly rose to 150–160 with extrasystoles, although it was still described by the anaesthetist as a "good" pulse. The patient did not present the picture of surgical shock in that her colour remained good; she did not become cold, and the blood-pressure reading of 125/75 was little below her pre-operative figure. The injection of desoxycorticosterone, recommended in this operation, did not affect the rapid pulse, which persisted at about 150 for eight hours, after which it fell to 80. This strange reaction in pulse rate without other signs of shock is somewhat different from the results described by Zondek (1945) and others.

She had an uneventful post-operative convalescence. Four weeks after the operation she was slightly more alert mentally, gave a better account of herself, spoke about her mother's death and her solitary life in her own house, and expressed some concern regarding her present financial condition and other difficulties. She said that she lived in a house, which she inherited from her mother, but was entirely alone; the house fell to pieces, the ruins were infested with mice, and the bank clerks told her that she had no money. The next thing she remembered was that the authorities sent her to hospital. Her mental improvement did not materially progress after this, although she showed increased interests and was moderately sociable. She could not, however, fully appreciate her position; she smiled foolishly when asked questions, was hardly employable, lacked interest and initiative, and seemed to be indifferent to the operation and her future. She appeared to have a slight loss of her facial hirsutism.

Two months after the operation she asked whether she could be allowed to go out for short walks in the grounds as she felt bored. This was permitted, and on the first day she absconded. She was, however, readmitted three weeks later. When outside she was living in the ruins of her home, and as she did not have enough to eat she raided the pig-bins of the neighbours for food.

Four months after the operation it appeared that little if any hair had fallen out spontaneously, but there was the "painless depilation" described in adrenal virilism. The long coarse hairs on the beard area could easily be plucked out without pain. The absence of complaint could not be ascribed to her mental condition, as she showed obvious signs of pain when a hair of the eyebrow was pulled out, and stated that it hurt. Also, the beard hair came out easily without causing puckering of the skin, whereas it was difficult to avulse an eyebrow, and a cone of skin was drawn up before the hair came out. At this time she was menstruating irregularly, but her breasts and bodily configuration were of course unchanged.

Although the pathological investigations were repeated at weekly intervals the results were constant after the first six weeks. The steroids had fallen from 60 to 8.4 mg. of androsterone a day. The blood-sugar curve returned to normal (Fig. 1, curve B); the sedimentation rate was increased to 22 mm. in the first hour and it still had not changed a month later. Blood chlorides were decreased from 430 to 390 mg. per 100 ml. The cholesterol, urea, and differential blood count showed no change. Histologically the excised suprarenal gland revealed very marked adenomatous changes, the ponceau-fuchsin staining was evident, and the cortex was remarkably enlarged and of abnormal pattern.

Case 2

A 43-year-old single woman, a typist, was admitted to hospital on Nov. 3, 1944, suffering from schizophrenia. The patient's paternal grandfather had died of senile dementia; he was always peculiar in his ways. The father died when the patient was quite a child. The mother dominated her. She has a normal sister. She was always a shy, sensitive child. When 10 years old she had a motor accident, when she was torn "from the front to the back passage." She was in hospital for a short time. Her mother was constantly talking about this accident, and the patient became very self-conscious of it. She was brilliant at school and read a lot of good literature. As menstruation did not commence her mother insisted on her going to various doctors. Endocrine treatments were given without result, and it was agreed that her delayed maturity might be due to psychological shock. Meanwhile she started work, and on the encouragement of her sister she left home and lived independently in lodgings. She was then obviously in a "nervous state" and began psycho-analytical treatment; this, however, was unsuccessful, and was interrupted by her progressive psychosis. She became markedly eccentric, a pacifist, a feminist; she gave away her salary to fellow workers, and developed an involved teaching on sex theories. Ultimately she became progressively dissociated and had to be admitted to hospital.

One sample of the stream of talk should illustrate her mental state: "I am married to a motor-car since ages. I am as feminine as Elizabeth in Jane Austen's novel. I cannot talk to somebody who is having a stronger personality than I. I did not have sex appeal, but now I am having it. I had a car accident and my sexuality was lost, but I was pictorially guided and retained femininity. My body is feminine. When I do anything I see it pictorially; I saw myself going to school. My sex tells me that the feminine brain is different to the masculine brain. I used to have a male brain; I have been treated by women who always treated me as a male. In the factory where I was working there was a man who was my double. My mother wanted to make me into a man. I cannot look into your eyes; a man's eyes magnify everything and overpower everything. I never menstruated: I don't want to menstruate; I stopped it with will-power, but I still feel vibrating; the electricity is not where my 'feminine' is, and I cannot bear it. I am vegetarian; a vegetarian can live with a man without having a child and flirting. If I don't eat I don't get sexual." During her stay the mental picture was stationary; she had a full course of electric convulsion therapy without any apparent result.

Physically she corresponded to Broster's type 1, which he calls adrenal pseudo-hermaphroditism—that is, a woman in whom changes due to suprarenal cortical pathology arise before puberty and the development of the female secondary sexual characteristics. She had never menstruated. The breasts were not larger than those of a normal man. The hands were broad and bony. She was only of average height, but the pectoral girdle was wide compared with the pelvic. The hair was of male distribution and her upper lip was very hairy, but the whole beard area was not nearly as heavily clothed with hair as in Case 1. Her blood pressure before operation was 130/90.

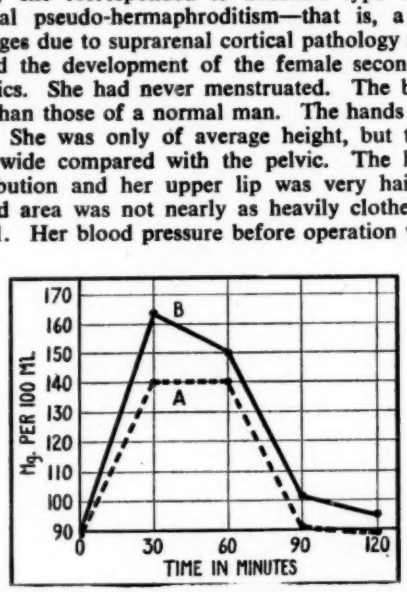

FIG. 2.—Case 2. Blood-sugar curve before operation, A, and after operation, B.

The urinary steroids were equal to 20 mg. of androsterone in 24 hours. Her blood sugar (Fig. 2, curve A) showed an approximately normal curve; her sedimentation rate was 9 mm. in the first hour; and the differential blood count, blood cholesterol, urea, and chlorides were within normal limits.

Intravenous pyelography did not reveal any asymmetry, and in April, 1946, laparotomy was performed. This showed that the left suprarenal was larger than the right, although the difference between them was not as great as in Case 1. The female pelvic organs were palpated and the uterus found to

be minute. The uterine body was about 1 in. (2.5 cm.) long and the thickness of an ordinary lead pencil, which suggests that the endocrine abnormality began well before puberty. Five weeks after laparotomy the left suprarenal was removed by the Bernard Fey approach, which again afforded an easy and adequate exposure. The operation was completed without difficulty, and this patient did not show the peculiar behaviour of the pulse observed in Case 1 when the gland was handled, nor any signs of shock.

Four months after operation her physical condition remained unchanged, which is not unexpected, as the adrenal pathology had presumably been in operation for over thirty years, compared with three to four years in Case 1. She was completely indifferent to the operation. Her mental state remained untouched and completely stationary, and her physical condition was unchanged. The operation had, however, produced the anticipated biochemical changes. The urinary steroids had fallen from 20 to 7.4 mg. of androsterone six weeks after operation. The blood-sugar curve was normal (Fig. 2, curve B); the blood sedimentation rate showed a 22-mm. fall for the first hour; the blood chlorides dropped from 440 to 380 mg. per 100 ml. and remained unchanged after a further six weeks. The cholesterol, urea, and differential blood count values were unchanged. Histologically, the cortex of the excised gland showed some enlargement, but no other change.

Discussion

In the two cases described there is evidence of adrenal dysfunction. This was shown not only by their similarity to other cases that have been found to have abnormalities of these glands but also by their raised urinary ketosteroid excretions. Both had concurrent mental illnesses, and in the first case there seemed to be a definite relationship between the time of onset of the mental and physical symptoms. Neither, however, was notably improved by adrenalectomy.

Theoretically one may postulate a relationship between abnormality of a specific gland and mental illness in the following ways: (1) The mental illness may be the direct result of the glandular dysfunction; (2) the mental illness may cause the glandular dysfunction; (3) the mental illness and the glandular changes may coexist independently; (4) the mental illness may be psychogenic in response to worry over the physical changes induced by the gland; and (5) the mental illness may be the result of secondarily induced changes in other glands. Examples which are largely attributable to one or other of these causes may easily be found, though it is not possible for any one of them to be entirely divorced from the rest.

So far as adrenal abnormalities are concerned primary mental disturbances in paragangliomata of the medulla and in Addison's disease are known, and secondary disturbance due to sexual dysfunction in virilism. Other pathological conditions, however, particularly in regard to the various types of hyperadrenalism described by Broster, have not yet been associated with specific mental disturbances, although, as we have said, a number of cases of mental illness have been successfully treated by adrenalectomy. This suggests that the first form of relationship may be fulfilled, but no example of the second is known to have been cited. In regard to the fourth, severe emotional disturbances result from the growth of hair in women, and we have seen a patient other than those described in this paper in whom a very acute anxiety state and definite suicidal ideas developed as a result of her hirsuties. It is possible that some of the less successful results might be explained by the suprarenal overfunction being secondary to pituitary activity, as suggested in the fifth group. Thus an adenomatous gland (adrenal adenomata are common) might conceivably become overactive under undue pituitary influence, and its removal might not be attended by the same relief of mental symptoms as if there was a primary dysfunction.

The first of our two patients developed her mental and physical symptoms at the same time, and it was believed that she belonged to the first group and had every chance of progressing favourably. The urinary androgens were certainly increased before and fell after operation, the chlorides and sugar-tolerance curves became normal, and a tumour giving a ponceau-fuchsin stain on section was removed; yet she did not improve. The second patient, on the other hand, had very long-standing abnormalities, a schizophrenic illness which was coloured by but not necessarily due to the physical changes and polyglandular disturbances. Perhaps, therefore, it was less likely that she would show an improvement after operation. It is interesting that in this case, too, in spite of the suprarenal removal, the reduction in the blood chlorides, the alteration in the sugar curve towards normal, and the post-operative reduction in ketosteroid excretion, there were no mental changes in keeping with this evidence. The raised sedimentation rates which developed subsequent to operation in both cases are unexplained.

Summary

A case of adrenal virilism with mental changes and another of adrenal pseudo-hermaphroditism, also with mental changes, are described.

Adrenalectomy (unilateral) produced the expected biochemical effects, and in Case 1 some physical change, but in neither was the mental picture materially affected.

The value of Bernard Fey's approach to the suprarenal is stressed.

A peculiar reaction of the pulse rate, apparently not due to surgical shock, during the removal of a large suprarenal is described.

An unexplained persistent rise in the blood sedimentation rate in both cases is noted.

We are very grateful to Dr. W. J. Griffith, who made the ketosteroid estimations.

References

Allen, C., *et al.* (1939). *British Medical Journal*, **1**, 1220.
—— and Broster, L. R. (1945). Ibid., **1**, 696.
Greene, R., Paterson, A. Spencer, and Pile, G. C. Lawrie (1945). Ibid., **1**, 698.
Mouat, T. B. (1939). *Brit. J. Urol.*, **11**, 126.
Zondek, H. (1944). *Diseases of the Endocrine Glands*, Arnold, London.

MISS RUTH THOMAS is one of those rare people who combine the possession of deep theoretical knowledge and wide practical experience with the power of clear and simple exposition. The seven pamphlets under review are the script of a series of broadcasts and a report prepared for the Curtis Committee. It is high praise to say that they read as well as they sounded. Miss Thomas deals with the early training of the infant and young child in an eminently sensible way, but it is a matter of dispute whether she is right when she forbids "potting" the infant under a year. She is correct in insisting that the child's anal eroticism, which is normal under a year, should not be frustrated and that too early insistence on cleanliness may result in trouble later on; but, by the establishment of a conditioned reflex to the pot, need the child be deprived of its pleasure and would not this save the mother much labour? Miss Thomas's description of the tragedies of homeless children is indeed harrowing; in this respect hell is paved as much by misdirected good intentions as by downright cruelty, and it is a relief to read of the real efforts by the better homes to provide the love and homeliness which these children so sadly miss. This brings out the urgent need for properly training those whose job it is to look after homeless children. These pamphlets should be bought from the National Association for Mental Health (39, Queen Anne Street, London, W.) and carefully studied by all those whether medical or lay who are concerned with children and the future welfare of the race. Their titles and prices are: *Children Without Homes: How Can They be Compensated for the Loss of Family Life?* (3s. 6d.) *Fears and Jealousies* (7d.), *Children's Fears* (7d.), *Children Who Dislike Their Food* (7d.), *Further Trying Habits* (7d.), *Habit Training* (7d.), *Temper Tantrums* (7d.).

NEUROLOGICAL COMPLICATIONS IN ATYPICAL PNEUMONIA

BY

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During the past few years there have been many accounts of the acute pulmonary infection which is usually called "primary atypical pneumonia." It is now generally accepted that this condition is due to infection by a virus, but attempts to identify a single aetiological agent have so far been unsuccessful. It is probable that many viruses are capable of producing the pulmonary lesions of atypical pneumonia: they have been noticed in influenza, psittacosis, rickettsial infections, and lymphocytic choriomeningitis. The present state of knowledge of the disease has been reviewed by Middleton (1945). Reports in the literature indicate that the mortality rate is low and that the disease usually runs a benign course without serious complications or sequelae. Rarely, however, serious neurological symptoms occur during the course of the disease. The purpose of this article is to describe six cases with such symptoms.

Physical signs of pulmonary disease are usually minimal, and the clinical diagnosis of atypical pneumonia depends almost entirely upon the radiological appearances in films of the chest, which reveal patchy opacities in one or both lungs. These opacities show a streaky increase in density radiating from the lung root and conforming to the general distribution of the bronchi. Superimposed upon this appearance is a mottled type of shadowing which is usually in the lower lobes. Unless serial films are taken during the course of the disease there may sometimes be difficulty in distinguishing the appearances from those of pulmonary tuberculosis. The areas of increased density are as a rule much larger than would be inferred from physical examination of the chest. On rare occasions pleural effusions and multiple fractures of ribs from severe coughing may be seen.

It is probable that much of the increase in recognition of atypical pneumonia in recent years is due to more frequent routine radiological examination of the chest in respiratory infections, particularly in the more benign cases. Little information of diagnostic value is obtained from laboratory investigations. There may be a leucopenia, and many workers have found "cold agglutinins" in the serum, but these features are inconstant and have no specific diagnostic value. The red cell sedimentation rate is usually much increased in the acute stage of the disease, and gradually returns to normal during recovery.

Case Reports

The cases here described include two cases of "acute infective polyneuritis," two cases of lymphocytic meningitis, one of "serous meningitis," and one of encephalitis. In each case the diagnosis of atypical pneumonia was based upon the radiological appearances.

"Acute Infective Polyneuritis"

Case 1.—A poultry-breeder aged 65 was seen in consultation with Dr. R. D. Neville on Nov. 8, 1944. For a week he had had upper respiratory infection with severe cough, dyspnoea malaise, and pyrexia of 100–101° F. (37.8–38.3° C.); there was no response to sulphapyridine. On Nov. 7 the patient became confused and irrational and complained of increasing weakness of both legs and inability to pass urine. On examination signs in the chest were minimal—a few basal rales—although respiratory distress was evident. There was severe flaccid paresis of both legs, and only slight toe movements could be performed. Knee- and ankle-jerks and abdominal reflexes were absent; the plantar responses were indefinite. Neurological signs were not seen in the cranial nerves, arms, or trunk. Sensory disturbance in the legs was minimal—impaired vibration sense in lower legs and slight loss of position sense in toes. The bladder was distended, and catheterization yielded 25 oz. (0.7 l.) of urine. The patient was transferred to hospital. Lumbar puncture showed: clear cerebrospinal fluid under a pressure of 100 mm.; cells, 19 lymphocytes per c.mm.; protein, 120 mg. per 100 ml.; chlorides, 710 mg. per 100 ml.; Lange's test, no change; Wassermann reaction negative. On Nov. 9 the patient became more confused and irrational, pyrexia 100–101° F. There were still only scanty signs in the chest, and some reddening of the pharynx. A skiagram of the chest revealed characteristic bilateral basal mottling of atypical pneumonia, which disappeared later. Leucocytes numbered 13,000 per c.mm. (polymorphs 81%). Frequent catheterization was necessary. The mental confusion persisted for a further two days, then subsided, leg movements began to return, and complete recovery from the flaccid paresis occurred in eight days. The patient was then able to stand, but he still had difficulty in starting micturition. He had full sphincter control three days later. Convalescence was uneventful. He returned home after fourteen days, and has remained well up to the time of writing.

Case 2.—A market gardener aged 53 was seen in consultation with Dr. F. W. Harrowell on March 1, 1945. He had been ill for about ten days with malaise, high pyrexia, severe cough, and respiratory distress. During the previous three days a progressive weakness of the legs and arms had appeared. More recently he had developed difficulty in swallowing, his voice had become hoarse, and he had great difficulty in raising himself from the bed. There was no sphincter disturbance. On examination the temperature was 103° F. (39.4° C.), respirations 36, and pulse 140. Rales and rhonchi were heard at both lung bases, and there was some injection of the pharynx; the blood pressure was 120/80. There was flaccid paresis of arms and legs. The legs were almost completely paralysed except for slight toe movements. All tendon-jerks and abdominal reflexes were absent, and plantar responses were flexor. There was doubtful loss of position sense in the legs, but no other sensory disturbance. Weakness of the erector spinae, recti abdominis, and intercostal muscles was noted. Respiration was almost entirely maintained by the diaphragm and accessory muscles in the neck. As respiratory paralysis appeared imminent the patient was removed to hospital so that a Drinker respirator could be used, but this was not necessary. Examination of the cerebrospinal fluid showed: pressure 130 mm.; no cells seen; protein, 80 mg. per 100 ml.; Lange's test, no change; Wassermann reaction negative. On March 2 the leucocytes numbered 13,200 per c.mm. (polymorphs 71%). the pyrexia was subsiding, and there was no increase in paralysis. The temperature became normal in three days. A skiagram of the chest showed basal mottling of atypical pneumonia. The paralysis cleared up very rapidly. On March 10 the patient was able to stand without aid, and thereafter his recovery was uneventful. His hoarseness and dysphagia were cured before the limbs. The tendon-jerks had not returned six weeks after his discharge from hospital on March 10, but he has remained well since.

Lymphocytic Meningitis

Case 3.—An airman aged 26 was admitted to hospital on April 23, 1943. He had been ill for one day with severe frontal headache, sore throat and dysphagia, pain in the back, and general malaise. There was slight vomiting, and his voice was hoarse. The temperature was 101.4° F. (38.55° C.), respirations 24, and pulse 72. The tongue was dry and coated; the fauces and tonsils were reddened, with greyish pseudo-membrane between the right tonsil and uvula. Klebs-Loeffler bacilli and haemolytic streptococci were not grown from a swab. He was given 16,000 units of diphtheria antitoxin. Next day he was slightly confused and delirious; temperature 102° F. (38.9° C.). He vomited during the night. The tonsils were still congested, and there was profuse nasal discharge. On the 25th the temperature was 102.5° F. (39.15° C.), and he still had headache and

backache. He resented flexion of the neck, but no definite meningism was present, and no evidence of otitis. Neck rigidity was more definite on the 26th. Cerebrospinal fluid showed: pressure, 130 mm.; fluid clear; cells, 64 lymphocytes per c.mm.; protein, 90 mg. per 100 ml.; chlorides, 690 mg. per 100 ml.; culture sterile; Wassermann reaction negative. Next day the readings were: pressure, 150 mm.; cells, 122 lymphocytes per c.mm.; protein, 100 mg. per 100 ml.; chlorides, 640 mg. per 100 ml.; culture sterile. The general condition was improved and the headache less, but neck rigidity was still present. On May 3 there was no headache or pyrexia, but he still had sore throat and some cough. The cerebrospinal fluid readings were: pressure, 100 mm.; cells, 380 per c.mm. (98% lymphocytes); chlorides, 730 mg. per 100 ml.; protein, 120 mg. per 100 ml. A skiagram of the chest on May 5 showed moderate bronchial striation and bilateral basal mottling, characteristic of atypical pneumonia. There were no definite physical signs in the chest. The patient was free from symptoms on the 7th, and the cell count had fallen to 12 lymphocytes per c.mm. He was discharged to a convalescent unit on May 10.

Case 4.—A schoolboy aged 13 was admitted to Wrexham E.M.S. Hospital on March 3, 1945. He became ill on Feb. 9 with what was called "influenza." Two days later he developed acute pain and tenderness in the left frontal region. After this he developed pain and stiffness in the neck, with Kernig's sign and bilateral extensor plantar responses, but no other neurological signs. The cerebrospinal fluid was said to have been normal on Feb. 15. On admission cerebration was slow, and he had difficulty in answering questions. Slight neck rigidity and Kernig's sign were present. There were no other neurological signs, no signs in the chest, and no papilloedema. Tachycardia 100 per minute. The cerebrospinal fluid showed: pressure, 300 mm.; cells, 100 per c.mm. (50% lymphocytes); protein, 30 mg. per 100 ml.; chlorides, 680 mg. per 100 ml.; culture sterile. Leucocytes numbered 9,000 per c.mm. (84% polymorphs). A skiagram of the chest showed slight thickening of the horizontal interlobe and pleural thickening in the lower part of the left lateral chest wall, with patchy shadowing over the left lower lobe. On March 9 the cerebrospinal fluid readings were: pressure, 160 mm.; cells, 60 per c.mm. (50% lymphocytes); protein, 60 mg. per 100 ml. Further progress was uneventful. A skiagram of the chest on March 26 showed no abnormal shadows in the lung fields apart from pleural thickening at the left base. The patient was discharged on April 23.

Serous Meningitis

Case 5.—A man aged 37 was admitted to hospital on Feb. 25, 1939. He had had pyrexia of 102–103° F. (38.9–39.4° C.) for three days, with severe cough and malaise, followed by intense frontal headache that was much aggravated by coughing. Only scanty moist sounds were heard in the chest. There was no papilloedema, meningism, or other neurological sign. The nasal sinuses transilluminated well. The cerebrospinal fluid showed: pressure, 300 mm.; no increase in cells; protein, 80 mg. per 100 ml.; Wassermann reaction negative. He was given 40 ml. of 50% dextrose intravenously, with some relief of headache. On Feb. 26 the headache was again severe, but it was relieved by further lumbar puncture and intravenous dextrose. The cerebrospinal fluid pressure was still 300 mm. Next day the headache was less severe, but there were still no neurological signs. The cerebrospinal fluid showed: pressure 250 mm.; no increase in cells. A skiagram of the chest revealed characteristic basal mottling of atypical pneumonia. Recovery was rapid and uneventful.

Encephalitis

Case 6.—A housewife aged 29 was first seen on Sept. 2, 1945, in consultation with Dr. O. W. R. Tomkinson. She had been admitted to an isolation hospital on Aug. 28 with severe pharyngitis which clinically resembled diphtheria, but no Klebs-Loeffler bacilli were found. Pyrexia of 102–103° F. (38.9–39.4° C.) continued, and there was respiratory distress, but only scanty rales and rhonchi were heard in the chest. An initial dose of 32,000 units of diphtheria antitoxin had been given, and, subsequently, full doses of sulphathiazole, but without satisfactory response. On Sept. 1 the patient became confused and delirious, and slight neck rigidity was noticed. Next day the cerebral symptoms were more prominent. The patient was in a state of irritable stupor, neck rigidity and bilateral extensor plantar responses were present, and the pyrexia was still 102–103° F., but there were no other neurological signs. She was transferred to the Staffordshire General Infirmary, and a lumbar puncture revealed a clear cerebrospinal fluid under a pressure of 160 mm.; no cells; protein, 30 mg. per 100 ml.; culture sterile; Wassermann reaction negative. The pyrexia subsided gradually during the second week of the illness, but widespread rales and rhonchi appeared in the chest and a skiagram showed the characteristic woolly mottling of atypical pneumonia. The meningeal irritation, confusion, and extensor plantar responses disappeared at the end of the second week of the illness. Further skiagrams of the chest showed the gradual disappearance of the opacities. The patient made a complete recovery and was discharged from hospital on Sept. 30.

Discussion

Neurological complications in primary atypical pneumonia are undoubtedly rare, but it is probable that in many cases, such as those described here, the severe neurological symptoms may distract attention from the associated pulmonary infection, which may be unrecognized unless skiagrams of the chest are taken. Turner (1945) mentions one case of transverse myelitis in 286 cases of atypical pneumonia. Sheppe *et al.* (1943) describe one case of meningomyelitis in 150 cases. Gundersen (1944) noted one fatal case of haemorrhagic encephalitis in 122 cases, and mentions another fatal case, with cerebral symptoms, which did not come to necropsy. Campbell *et al.* (1943) describe one fatal case of encephalitis in 200 cases. Ravenswaay *et al.* (1944) noted meningeal symptoms in 0.4% of 1,862 cases, and Glendy *et al.* (1945) noted three cases of "meningism" in 180 cases. Scadding (1937) and Perrone and Wright (1943) each reported a fatal case of encephalitis. Many other reports of large series of cases contain no reference to any neurological complications. Reimann (1938) and Hein (1943) report cases of meningo-encephalitis in which complete recovery took place.

The first two cases described above as "acute infective polyneuritis" closely resemble those described by Gordon Holmes (1917), Rose Bradford *et al.* (1918–19), and Guillain, Barré, and Strohl (1916). All these authors mention the association of the neurological picture with a respiratory infection, the nature of which at that time was unrecognized. The case of meningomyelitis described by Sheppe *et al.* (1943) was very similar in its clinical manifestations to my two cases of infective polyneuritis, but there was a high cell count in the cerebrospinal fluid, predominantly of lymphocytes. The sensory system was unaffected in their case and was only very slightly affected in my two cases. Another similarity, also mentioned in the earlier accounts, was the very rapid recovery from a severe flaccid paraplegia.

While it is realized that there is no evidence on which to attribute the above cases to the same infective agent, the presence of similar pulmonary lesions in all of them justifies, at any rate, a clinical correlation. The diagnosis of atypical pneumonia in such cases by radiological examination of the chest may have little value from the therapeutic point of view, but it may be of help in giving a hopeful prognosis. It seems probable from the very infrequent incidence of neurological complications that the virus of atypical pneumonia is primarily viscerotropic, and that when nervous involvement does occur the results are not as severe as in infection with primarily neurotropic viruses.

The clinical symptoms of these cases are comparable to those found in other virus infections of the nervous system, but residual damage has been absent. Although fatal cases of myelitis and encephalitis have been reported they appear to be rare.

Summary

Six cases are described in which symptoms of severe spinal and cerebral lesions occurred in association with pulmonary lesions presenting the radiological appearances of "atypical pneumonia." Recovery was rapid and complete. Although the clinical picture was variable it was in each case suggestive of a virus infection of the nervous system.

A review of the literature suggests that the nervous system is rarely involved in atypical pneumonia, but that when this does occur the tendency is towards complete recovery without sequelae.

REFERENCES

Bradford, J. Rose, Bashford, E. F., and Wilson, J. A. (1918–19). *Quart. J. Med.*, **12**, 88.
Campbell, T. A., Strong, P. S., Grier, G. S., and Lutz, R. J. (1943). *J. Amer. med. Ass.*, **122**, 723.
Glendy, R. E., Beaser, S. B., and Hankins, W. D. (1945). *Arch. intern. Med.*, **75**, 30.
Guillain, G., Barré, J. A., and Strohl, A. (1916). *Bull. Mém. Soc. méd. Hôp. Paris*, **40**, 1462.
Gundersen, S. (1944). *New Engl. J. Med.*, **231**, 697.
Hein, G. E. (1943). *Lancet*, **1**, 431.
Holmes, Gordon (1917). *British Medical Journal*, **2**, 37.
Middleton, W. S. (1945). *Med. Annu.*, p. 247.
Perrone, H., and Wright, M. (1943). *British Medical Journal*, **2**, 64.
Ravenswaay, A. C. van., Erickson, G. C., Reh, E. P., Siekierski, J. M., Pottash, R. R., and Gumbiner, B. (1944). *J. Amer. med. Ass.*, **124**, 1.
Reimann, H. A. (1938). Ibid., **111**, 2377.
Scadding, J. G. (1937). *British Medical Journal*, **2**, 956.
Sheppe, W. M., Osterman, A. L., Ahroon, C. R., and Zuflacht, J. J. (1943). *J. Amer. med. Ass.*, **122**, 1245.
Turner, R. W. D. (1945). *Lancet*, **1**, 493.

DEFICIENCY DISEASES IN REOCCUPIED HONG KONG

BY

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In a paper entitled "Nutritional Diseases in Hong Kong before the Japanese Invasion" (Fehily, 1945) I described the widespread occurrence of B avitaminosis among the Chinese population in Hong Kong which was undoubtedly due to the high consumption of imported highly milled, and, latterly, long-stored rice. This vitamin B deficiency manifested itself mainly in beriberi, which was the second highest cause of death in Hong Kong in 1940; while maternal B avitaminosis (either latent or manifest) was the cause of infantile beriberi, a disease which often appeared in such an acute and lethal form that the term "human milk intoxication" was suggested for it. Practically no other deficiency diseases were observed before the occupation; isolated cases of vitamin A and C deficiencies, mainly secondary, were encountered in unwanted female infants who were fed only on rice paste.

Absence of Gross Deficiency Diseases

On the reoccupation of Hong Kong the medical officers of the British Military Administration were surprised at the absence of widespread beriberi and pellagra; owing to fishing restrictions gross vitamin A and protein deficiencies were also expected, but these did not materialize; neither was real starvation evident, although the population of Hong Kong was obviously in a state of subnutrition. However, on close inspection the signs of chronic and mild vitamin B deficiency, mainly that of aneurine and riboflavine, were detected.

It seems that during the Japanese occupation of Hong Kong rice was severely rationed, and as soon as old long-stored stocks had been exhausted relatively fresh rice was issued to the population. In addition people ate whatever was available, and centuries-old food fads and prejudices were thrown overboard. Wherever possible, people grew their own vegetables and kept hens and rabbits, even in flats and cubicles. These practices undoubtedly saved the population of Hong Kong from severe deficiency diseases as well as from starvation.

Extensive Relief Work by the Military Administration

After the reoccupation of Hong Kong the Relief Section of the British Military Administration opened free-food kitchens and unstintingly supplied free rations to charitable institutions and to all under-privileged persons, while the British and Australian Red Cross Societies assisted by issuing Red Cross parcels not only to civilian internees and to prisoners of war and their dependants but also to the sick and needy and to orphans.

Unfortunately, since the liberation of the Colony virtually all the rice available has been highly milled, but it has been rationed and supplemented by fresh Australian wheat-flour, which, although highly milled, is richer in vitamin B than highly milled rice, and by blue peas, which are rich in vitamin B. In addition the Military Administration distributed vitamins on a large scale; indeed, the population of Hong Kong became vitamin-conscious for the first time in its history. The popularity of vitamins may be judged from the fact that on occasion only vitamins were pilfered when warehouses were broken into.

When I arrived in the Colony six months after the liberation undernourishment had almost disappeared and the population was apparently in good health. Admittedly B avitaminosis was still encountered, but with the return of prosperity some people were able to get expensive highly milled rice on the black market and thus defy the rationing system. In addition the return of Hong Kong residents and the large influx of immigrants (many of these returning residents as well as immigrants were already B avitaminotic) made control of nutrition more difficult. Indeed, during the first nine months of liberation the population of Hong Kong tripled and almost reached its pre-war level, so that eventually the issue of rations had to be restricted to returning residents, and immigrants had to patronize the black market, where they purchased highly milled rice as their staple food. In spite of this the incidence of B avitaminosis in Hong Kong was very low compared with that of the years 1938–41, and undoubtedly its complete eradication could be effected if lightly milled rice (or other high-extraction cereals) became the staple food of the population. It is gratifying to know that the Killearn Nutrition Conference in Singapore last year passed the following resolution: "There should be laws or regulations to prevent the high milling of cereals to a degree dangerous to the health of the public, because high milling not only removes valuable nutrients from the food but also reduces the quantity of food available for consumption." However, owing to present world conditions any rice available for importation into the Colony during the last year was only too welcome.

Vitamin B Deficiency in Infants

Special attention was paid to orphanages, infant welfare centres, and milk-distribution centres in order to detect any signs of deficiency diseases. In one foundling home with 75 orphans up to the age of 5 years I observed signs of vitamin B deficiency in 27 children. The ocular signs of ariboflavinosis were especially prevalent; 12 children had conjunctivitis of the type described as being common in Chinese in Shanghai (Hou, 1940, 1941), and 10 other children had photophobia alone. On entering the infants' ward one was surprised to see so many infants with their heads buried in their pillows, while others were doubled

up with their heads between their knees. These ocular symptoms were frequently accompanied by cheilosis, marginal stomatitis, and glossitis, and it is interesting to note that both photophobia and conjunctivitis regularly disappeared after a few days' administration of riboflavine and "marmite."

Undoubtedly all these infants were deficient also in other components of the vitamin B complex. Two of them (aged 2½ and 3 years) had beriberi of the adult dry type; one had classical acrodynia ("pink disease"); and one had a pellagroid condition of the skin. In smaller infants these multiple deficiencies manifested themselves in wasting, pallor, rigidity of the limbs and body, gastro-intestinal disturbances (mainly due to decreased tolerance of fat and protein), stomatitis, and glossitis: it seemed incongruous to see pale pinched infantile faces with blood-red lips and tongue. However, the condition of these infants did not represent the true nutritional state of infants in general; almost all the inmates of such foundling homes are unwanted female babies whose mothers were unable or unwilling to nurse them owing to the nature of their work or the partial or complete absence of lactation. Most of these babies, many of whom were found abandoned on the steps, had been fed mainly on rice paste, and showed signs of severe malnutrition on admission; their treatment was extremely difficult because of multiple vitamin deficiencies and gastro-intestinal disturbances.

In one infant welfare centre 190 out of 1,215 cases (15.6%) showed signs of vitamin B deficiency—B_1 deficiency in 77 cases, B_1 and B_2 (riboflavine) deficiency combined in 110 cases, and manifest signs of ariboflavinosis alone in three cases. Only two infants, both entirely breast-fed, out of 1,215 of the new cases were found to be suffering from acute infantile beriberi (human milk intoxication). The nutritional state of infants in Hong Kong cannot be judged by the condition of infants brought to infant welfare centres either, as up to 90% of them require medical treatment, there being no children's hospital or special children's clinics.

Subsequently I examined the children at milk-distribution centres. During the Military Administration these centres were established in hospitals, convents, orphanages, and infant welfare centres for the purpose of overcoming the black market in preserved milk, and children of the district up to 2 years of age were registered and supplied with milk at the controlled price. As they had to be brought to the centres, it was possible to observe the nutritional state of infants of most classes in the community. Out of 2,000 babies examined in one centre, 82 (4%) showed signs of vitamin B deficiency, ariboflavinosis being most evident.

Practically no other deficiency diseases were observed, although the hair growth of some babies about the age of 1 year was noticeably poor, probably as a result of deficiency of first-class protein during the Japanese occupation. One 4-year-old child was brought to the centre on its mother's back, and he was suffering from an acute form of rickets and was unable to walk. However, as none of the other children in this family showed signs of vitamin D deficiency this single case of rickets was probably due to some derangement of the endocrine system.

Outbreak of Scurvy

Quite suddenly in April, 1946, scurvy broke out in the foundling home previously mentioned, 12 of the orphans being affected. This outbreak was unexpected, as the infants were supposed to be given ascorbic acid tablets and the other children tinned tomato juice as prophylactic, in addition to a regular supply of fresh vegetables. On investigation, however, it was found that the children's diet consisted mainly of cereals supplied by the relief section and tinned foodstuffs provided by the British Red Cross Society. Fresh fruit was not available, while the amount of fresh vegetables (owing to the high cost) was quite inadequate. Consequently another orphanage, which I had not previously visited, was inspected, and it was found that of 188 children between the ages of 5 and 17 years 72 (38%) showed signs of frank scurvy. Here the scurvy must have been of considerable duration judging by a most irregular eruption of teeth (unusual among Chinese in Hong Kong), accompanied by enamel hypoplasia and subsequent caries. Close investigation revealed that the children had subsisted for months on a scorbutic diet consisting mainly of cereals and tinned meat and fish supplied by the British Red Cross. Fresh vegetables were supposed to be provided by the Committee (the orphanage being a Chinese charitable institution), but the amount of money allotted for this purpose was on the pre-war scale. To make matters worse, dried vegetables, being cheaper, were frequently supplied instead of the fresh variety. Thereafter fresh vegetables, ascorbic acid tablets, and occasionally oranges were added to the children's diet, with the result that gingival haemorrhages ceased after two weeks, and five of the children with frank scurvy could be regarded as cured after eight weeks. Unfortunately, owing to the ending of my tenure of office, I was unable to observe the further progress of treatment.

A high incidence of conjunctivitis was also present among these children; all but one child showing signs of vitamin C deficiency had conjunctivitis, while only two children with conjunctivitis were free of any other signs or of C avitaminosis. In contrast to the conjunctivitis due to riboflavine deficiency there was no lacrimation or photophobia—indeed, no subjective symptoms whatever—while the only part of the conjunctivae affected was the palpebral. The symptoms consisted mainly of hyperaemia, thickening, and, in one case only, haemorrhage. The alterations in the palpebral conjunctivae seemed to correspond with those of the discoloured and swollen gums in the condition termed "gingivitis scorbutica"; "conjunctivitis scorbutica" would seem to be a suitable term for this manifestation in the conjunctivae.

Sporadic cases of scurvy among Chinese nurses also came under my observation. In all these cases the history was similar; the diet consisted mainly of cereals and tinned foodstuffs. As a result of the increased cost of labour, profiteering, and the devaluation of Hong Kong currency by the Japanese the prices demanded by merchants for all local produce were exorbitant; at one time 1 lb (454 g.) of local potatoes cost as much as a 14-oz. (388-g.) tin of imported corned beef. Foreign exchange for the importation of Californian oranges was obtained by some merchants, but the oranges were cornered by unscrupulous profiteers, who either exported them into China or demanded such exorbitant prices that only the very rich could afford to buy them. Consequently the exportation of oranges was prohibited and prices were controlled, with the result that they could be bought at a reasonable price. In addition the Administration endeavoured to cut out the middlemen's profits, so far as the sale of vegetables was concerned, by taking over their activities, and in order to cut down the prices of fruit and vegetables it imported large quantities from the U.S.A. and Australia.

Great Reduction in Mortality Figures

After one year of British reoccupation the health of the population in general has greatly improved and the mortality figures have been considerably reduced. This is a result of the rationing of cereals, the price control of essential foodstuffs, and, to a smaller extent, the widespread

distribution of vitamins. The number of deaths that occur daily now averages less than 45, in comparison with a daily average of 175 in 1941. As regards infant mortality, it is estimated that for the year 1946 the death rate will be approximately 100, as compared with 327 in 1940 (Annual Report of Director of Medical Services, 1940). The mortality rates for 1941 are not available; nor are the rates for the years of enemy occupation (1942–5). However, the infantile death rate during the occupation must have been very high, owing to the absence of any substitute for human milk and the decreased lactation of mothers suffering from undernourishment. In one foundlings' home the mortality rate of babies under 3 months of age was 100%.

Summary

Before the war in the Pacific severe B avitaminosis was widespread in Hong Kong and manifested itself mainly in beriberi. At that time the exceedingly high infantile mortality was chiefly due to a disease termed infantile beriberi or "human milk intoxication."

After the liberation of the Colony the absence of gross deficiency diseases was observed, although the population was in an evident state of subnutrition.

Extensive relief measures undertaken by the Military Administration are cited.

After six months of reoccupation a nutritional survey of infants was made, and it was found that mild and chronic vitamin B deficiency still existed in the Colony to the extent of 36% in a foundling home, 15.6% in an infant welfare centre, and 4% among the children in the milk-distribution centres, Ariboflavinosis was relatively more evident than before the outbreak of the war in the Pacific. Acute infantile beriberi, or "human milk intoxication," had virtually disappeared.

Practically no other deficiency diseases were observed, although, owing to the exorbitant prices of vegetables and fruit and their consequent substitution by cereals and tinned foodstuffs, there were outbreaks of scurvy in two orphanages as well as some isolated cases among the adult population.

After one year of reoccupation the health of the population has greatly improved, and the mortality rates are reduced to less than one-third of those for the years immediately preceding the war.

REFERENCES

Fehily, Lydia (1945). *British Medical Journal*, **2**, 468.
Hou, H. C. (1940). *Chin. med. J.*, **58**, 616.
—— (1941). Ibid., **59**, 314.

Medical Memoranda

Fatal Tracheitis after Endotracheal Anaesthetic

It has wisely been urged that anaesthetic disasters should be reported.

In common with many other anaesthetists I have for years kept endotracheal tubes in biniodide of mercury (1 in 1,000 solution); that is, until December, 1944, when I had a fatal case of tracheitis.

CASE HISTORY

A woman of 37 was anaesthetized for myomectomy. She had a history of recurrent aphonia which the E.N.T. surgeons had diagnosed as hysterical, though there was said to be "some thickening of the cords." She was induced with "pentothal," cyclopropane, and a little ether, and intubated under direct vision. A size 7 Magill tube was used, which was a moderately tight fit. This had been soaked in biniodide and washed. Anaesthesia was maintained with cyclopropane. In the evening of the following day her breathing became difficult; there was also collapse of the right base. Her temperature was 101° F. (38.3° C.). Adrenaline was advised, and 5m (0.3 ml.) gave considerable relief. The day after there was again an attack of stridor and dyspnoea with the production of greenish sputum. On the third day after operation the dyspnoea became much worse, though the temperature remained at about 101° F. (38.3° C.). Tracheotomy was performed with great difficulty, but the patient succumbed on the table. Thick membranous material had been removed during this operation.

At necropsy the larynx and trachea were found to be considerably smaller than usual. There was subchronic inflammation in trachea and bronchi, with superimposed acute changes in trachea, bronchi, and lungs.

COMMENTARY

The exact cause of death remains uncertain. At that time, however, a number of patients were getting sore throats after intubation—a fact elicited without any more than the customary amount of post-anaesthetic interrogation. Also, at that time face masks were being cleaned with biniodide after use, and a number of patients had a post-operative rash on the face. This was a painless non-irritating erythema. On its first appearance it was as though the shape of the cushion of the mask had been stamped on the face. This mark spread inwards and outwards until in a few days the whole face was red. It ended, a few days later, in a fine, faintly fawn-coloured desquamation. The dispensary reported that the biniodide tablets were the same as usual, and the theatre sister that the solution being made was of the usual 1 in 1,000 strength. The rinsing of the masks and the endotracheal tubes was checked. As there was no new factor in the biniodide, was there some difference in the wartime rubber? Was it having some action with, or absorbing, the biniodide? With a view to finding an answer to these questions the following test was carried out.

On the forearms of 30 volunteer patients or colleagues three little patches were fixed: (*a*) a piece of plain endotracheal tube of wartime rubber; (*b*) a piece of a similar tube that had been soaked in biniodide and well washed; and (*c*) a small pellet of cotton-wool dipped in biniodide and squeezed dry. These were inspected at two-hourly intervals for 12 hours. There was one doubtful reaction to the plain rubber, nine to the biniodide rubber, and eleven to the biniodide. The amount of solution left in the wool may have been variable. The reaction consisted of a pinkening, in several well-marked places, followed in a day or two by fine desquamation.

Although this series is small, it does at least show that there is some change in the rubber after it has been soaked in the solution. Since ceasing to use biniodide—and this is now twenty months—we have had no face reactions at all and not more than the occasional sore throat—certainly no such reaction as in the above case.

I should be interested to know whether other people have had similar experiences, or can cast any light on this one.

I thank Miss M. A. M. Bigby, M.D., M.R.C.O.G. (surgeon in charge), for allowing me to publish this case; and Dr. W. Pagel, hospital pathologist, for his help and interest.

SHILA G. RANSOM, M.R.C.S., L.R.C.P., D.A.,
Late Senior Anaesthetist,
Central Middlesex County Hospital.

Shell Fragment Migrating from Kidney and Passed per Urethram after 23 Years

The following case report seems interesting enough to merit publication.

A municipal official aged 61 came into my consulting-room on May 28, 1942, and produced for inspection a miscellaneous collection of coins and high-explosive shell fragments removed from his body at various times. Among these was a fragment measuring 1 cm. by 0.5 cm. by 0.2 cm., which he had passed per urethram in 1938. His history was confirmed by reports and radiographs which he brought with him, and was as follows. While serving as a gunner during the second battle of Ypres in 1915 a "whizz-bang" shell exploded close to him and inflicted severe wounds in the left leg and lower chest. He had numerous operations and recovered. Eleven years later, in 1926, he was in London and was examined by Col. (now Major-Gen.) West. There was an open sinus passing between the eleventh and twelfth ribs to the left kidney, and a radiograph showed three pieces of shell casing in the neighbourhood of the kidney but none lower down. An operation was performed and one fragment removed. In 1928 the remains of the kidney were removed and another fragment was recovered. In 1938, ten years later, he passed the third fragment per urethram. A radiograph showed that no fragments remained. As no renal colic preceded the event it is improbable that the ureter was the path of transit. The fragment had apparently travelled down and ulcerated into the bladder.

R. CAMPBELL BEGG, M.D., F.R.C.S.Ed.

Reviews

PHYSICS FOR THE ANAESTHETIST

Physics for the Anaesthetist. By R. R. Macintosh, D.M., F.R.C.S.Ed., D.A., and William W. Mushin, M.B., B.S., D.A. Illustrated by Miss M. McLarty. (Pp. 235; illustrated. 30s.) Oxford: Blackwell Scientific Publications. 1946.

It is incontestable that the modern anaesthetist should have a good working knowledge of applied physiology and applied physics. The former subject is dealt with in most textbooks on anaesthesia, but the latter has been generally neglected. The result is that many a candidate for the D.A. finds to his chagrin that he is quite unable to give an intelligible answer to the simplest question involving elementary physics, the memories of his first-year student days having faded into obscurity.

This book, from the Nuffield Department of Anaesthetics at Oxford, should therefore supply a definite need, for it explains the physical laws which underlie the design and working of all types of anaesthetic apparatus as well as a great variety of other subjects of interest to the anaesthetist. To take two examples, the importance of large-bore and gently curved connexions is explained, as is the reason why an air embolism can occur from a leak in a saline infusion apparatus if the controlling clip is placed above the drip chamber. The principle and applications of the injector and the implications of osmosis and filtration are dealt with much more lucidly than is usually the case.

The style is simple with the minimum of technical terms. The numerous illustrations, many in colour, executed by Miss McLarty, are clear without the over-simplification which leads to error. The book can be thoroughly recommended.

DISTURBANCES OF MOOD

Les Dérèglements de l'Humeur. By Jean Delay. Preface by Gustave Roussy. (Pp. 180. No price given.) Paris: Presses Universitaires de France, 108, Boulevard Saint-Germain. 1946.

The theme of this book is that alterations of mood depend on the Jacksonian principle of cortical control over the lower cerebral centres. In the opinion of the author the hypothalamus stimulates the "affective levels" of the individual and the cortex integrates them.

In the first part good clinical descriptions are given of depressions, manias, and schizophrenic reactions and the effect of shock therapy upon them. Electric shock therapy is most useful in the depressions. An interesting point which is raised is how far hypochondria, psychasthenia, and true neurasthenia are allied to cyclothymic depressions. The author thinks that if the manifestations of these latter conditions are episodic they may be truly cyclic and will be improved by shock therapy, and in fact this therapy may be itself diagnostic as it has no effect unless the condition is truly cyclothymic. The manias are less amenable to shock therapy but may be tried, and sometimes combination of shock with insulin therapy is worth while. Shock therapy—or, better, insulin therapy—is indicated in the schizophrenic conditions, but only 26% to 30% of patients are really benefited.

In the second part of the book the cortico-hypothalamic functions are examined in relation to the hyperthymias (manic depressive states) and the hypothymias (schizophrenic reactions). Clinical manifestations of pathological and experimental lesions of the hypothalamus are described and the effects of drugs and shock on hypothalamic function are studied, and it is argued that the action of shock therapy can be explained through the action of this therapeutic measure on the diencephalon. The diencephalon may be regarded as "the metronome of mood," but the cortex, especially the frontal cortex, is necessary for its expression. If excessive instinctive and emotional impulses reach the frontal cortex a state of mania will result. In melancholia there is also an excess of diencephalic impulses, but these are of an inhibitory nature. Both these conditions are therefore hyperthymic and represent an over-excitation of the diencephalon. In schizophrenia there is a diminution of diencephalic influence on cortical function, which is therefore not controlled by the instinctive necessity to adapt to life which characterizes diencephalic function, hence the withdrawal from reality. The diencephalon is not therefore the seat of consciousness, but may well be the centre responsible for the awakening of consciousness. The cortex in its turn normally controls diencephalic activity, especially as with mental growth the instinctive demands become less insistent and the "long view" takes precedence.

The thesis presented in this book is both interesting and important. Our ignorance of the true nature of the functional psychoses has been one of the reproaches of psychiatry, and the uncontrolled and empirical use of shock therapy has given rise to serious concern. Anything which will give order to our thought on these subjects is therefore well worthy of serious study.

SURGICAL PATHOLOGY

Pathology in Surgery. By Nathan Chandler Foot, M.D. (Pp. 511; 368 black-and-white illustrations and 20 in colour. £3.) London: J. B. Lippincott Company. 1946.

Chandler Foot is known to all pathologists in this country for his many sound contributions to histo-pathology, both technical and academic. He has written an excellent book full of useful information, skilfully illustrated, and remarkably pleasant to read. It is intended to be "a guide to the surgical pathology of those disorders in which operations are carried out or . . . specimens removed for the specific purpose of obtaining biopsies," and it is "not too comprehensive in the theoretical considerations of all the aspects of the lesions that are described." No serious attempt is made "to explore those pathologic lesions that are seen only at autopsy."

Within these self-imposed limitations the author has left himself space and scope to deal at length with those diseases which are normally treated by surgical methods. Diseases of the breast and the gastro-intestinal tract are therefore dealt with in a more specialized manner than is usual in the average textbook of surgical pathology. The skin biopsy and the histology of the excised lymph node have not been forgotten. Debatable problems are discussed with commendable brevity and lucidity. This book will prove to be a trusty guide to those who undertake the responsibility of reporting upon the routine surgical histology of a general hospital. It will appeal to surgeons because it is so obviously the fruit of the author's long-accumulated experience in answering the questions and dealing with the pathological problems of his surgical colleagues.

PULMONARY TUBERCULOSIS: STATISTICAL STUDY

The Prognosis of Open Pulmonary Tuberculosis. A Clinical-Statistical Analysis. By Gunnar Berg. (Pp. 208. No price given.) Lund: Häkan Ohlssons Boktryckeri.

The investigations into the after-histories of patients suffering from pulmonary tuberculosis in England and on the Continent are reviewed by Dr. Gunnar Berg in the opening chapters, and the well-known difficulties of comparing these experiences are discussed. The author, in his series of 6,156 patients over the age of 15 with positive sputum who were resident in Gothenburg, Sweden, during the period 1910–34, is not concerned with the effects of treatment upon prognosis as were the majority of earlier workers, but takes as his datum line the first appearance of tubercle bacilli in the sputum.

The data obtained from the records of twelve different hospitals and institutions have been analysed by age and sex for the three periods 1910–19, 1920–27, and 1928–34. The mortality was lower in the last period than in the earlier periods for the younger ages and for the first year after contracting the disease; but for the older ages and for cases of four or more years' standing there was little difference in the experiences of the three periods. These differences may be due to some selection of patients; it seems probable that the chance of surviving has not materially altered during the past thirty years. That the data are heterogeneous is a possibility that the author has not sufficiently realized, and is factor may account for some of the apparent differences—e.g., the median duration of disease before the sputum became positive is given as 2.9 months in 1934 and 11.6 months (from the table it should be 10.5 months) in 1910–11. The tabulation in detail of this large series of cases over a long period forms a useful addition to the material available for the study of the after-histories of the tuberculous patient.

The statistical treatment is somewhat faulty. In a number of tables the expected frequencies have been found on various hypotheses and compared with those observed by the χ^2 test; this test was not justified in all the comparisons made and should not have been used. The analysis of variance carried out was also unjustified. The author deals at length (34 pp.) with the prognosis of collapse treatment and reaches a negative conclusion on the results of such treatment. Data collected from so many sources and over such a long period are hardly suitable for such an inquiry. A comparison of survival rates after collapse therapy and conservative treatment is extremely difficult unless the data can be divided into groups of comparable degrees of severity, and this the author was unable to do.

OBSTETRIC PATHOLOGY

A Textbook on Pathology of Labor, the Puerperium, and the Newborn. By Charles O. McCormick, M.D., F.A.C.S. (Pp. 399; illustrated. 37s. 6d.) London: Henry Kimpton.

This book is based on the author's lectures to senior medical students at Indiana University. One section is devoted to each aspect of the title: labour, the puerperium, and the newborn. The belief is expressed that the attention of the student should be focused upon "infection, toxaemia, haemorrhage, disproportion, prophylaxis, and diligent attention to the newborn infant." The author also believes that in this streamlining era the symposium type of text becomes a real necessity, so his teaching is arranged in that condensed form beloved of many students on both sides of the Atlantic. It must be remembered, however, that condensed foods are particularly liable to result in indigestion if not taken with due care. The memorizing of lists of summarized facts is not sufficient to turn a keen student into a good doctor: cause and effect must be correlated logically whenever possible. For example, the pages dealing with uterine inertia contain much sound instruction, but when the treatment of secondary inertia is discussed no reference is made to the fact that this treatment, to be effective, must depend on the cause of the inertia. Lists of symptomatic treatment may be dangerous. The views of the author on sterilization would be regarded as lax in many clinics. Several pages are devoted to descriptions of various techniques which may be adopted when the operation is performed.

The second section of the book deals with the pathology of the puerperium and opens with an excellent account of puerperal infections. Due reference is made to the work of Semmelweis, Oliver Wendell Holmes, and Sir Thomas Watson, and in the pages referring to these men one catches a glimpse of what a stimulating teacher the author must be. One would imagine that his lectures and ward rounds are enlivened by the crisp phrase and the timely aphorism to drive home the moral of sound doctrine. The book is well illustrated, and in spite of its streamlining has earned its place as a book of reference on this reviewer's bookshelf.

Sir HENRY BASHFORD'S new book, *Fisherman's Progress*, is published by Constable and Co. at 8s. 6d. Why do so many doctors discover themselves born fishermen? Probably because the arts of medicine and angling equally demand natural aptitudes for observation, reflection, and manual skill. The author of this little book has also the gift of words to take us to the rivers and lochs he loves so well and lets us share with him the thrill of his first salmon, and the excitement of the huge trout half seen in the darkness and lost after an hour's play. There is no better recreation for the true fisherman when he cannot be by the water than to read books about fishing, and this, with its exquisite photographs, is perfect of its kind.

A very practical and well-illustrated pamphlet, *Infestation Control: Rats and Mice*, has been published for the Ministry of Food by H.M. Stationery Office at 1s. 6d. This handbook, prepared by Mr. S. A. Barnett, makes generally available, to all responsible for the destruction of these pests, methods based on rigorous scientific research and tested in large-scale practice. Sound and logical planning, in accordance with the general principles laid down by the Ministry, is essential for scientific destruction. The fundamental research on which the methods are based has been carried out under the aegis of the Agricultural Research Council by the Bureau of Animal Population, University of Oxford.

BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

Early Ambulation and Related Procedures in Surgical Management. By D. J. Leithauser, M.D., F.A.C.S. (Pp. 232. $4.50.) Springfield, Illinois: Charles C. Thomas. 1946.

Exercise, especially walking, is regarded as a prominent feature of immediate post-operative treatment. The book includes chapters on psychological factors, pre-operative care, and economic influences.

Sir John Jervis on the Office and Duties of Coroners. By W. B Purchase, *M.C.*, M.B., B.Ch., D.P.H. Eighth edition. (Pp. 350. 30s.) London: Sweet and Maxwell and Stevens and Sons. 1946.

This student textbook, which covers the duties of coroners, has been brought up to date and partly recast in narrative form instead of all the subject-matter being dependent upon some part of the Coroners' Acts.

New Human Embryology. By Bradley M. Patten. (Pp. 776. 45s.) London: J. and A. Churchill. 1946.

Designed as a standard textbook of embryology for medical students. Profusely illustrated. From the University of Michigan Medical School.

The Administration of Health and Physical Education. By J. F. Williams, M.D., Sc.D., and C. L. Brownell, Ph.D. Third edition. (Pp. 483. 15s.) London: W. B. Saunders. 1946.

This American book is intended for school-teachers and administrators. The authors discuss such subjects as school sanitation, physical education, handicapped children, swimming pools, and the cost of health education.

Group Psychotherapy: Theory and Practice. By J. W. Klapman, M.D. (Pp. 344. 21s.) London: Wm. Heinemann. 1946.

The principles of group psychotherapy are explained. A historical and anthropological summary is followed by an account of group transferences and formations, group and individual psychotherapy, and the use of the psychodrama.

The Nation's Food. Edited by A. L. Bacharach, M.A., F.R.I.C., and T. Rendle, C.B.E., F.R.S. (Pp. 349. 18s.) London: Society of Chemical Industry. 1946.

Articles by 32 contributors on the physical and chemical characteristics of British foods, with special reference to nutritional value. The foodstuffs considered are grouped into 7 sections; the egg, the potato, vegetables, cereals, meat, fish, and milk.

Allergy. By E. Urbach, M.D., F.A.C.A., and P. M. Gottlieb, M.D., F.A.C.A. Second edition. (Pp. 968. 70s.) London: Wm. Heinemann. 1946.

New sections in this book are on psychosomatic aspects of allergy, the Rh factor, allergic bronchitis, allergic cough, and eosinophilic erythroedema.

Tuberculosis in the United States. U.S. Public Health Service. (Pp. 190. No price.) U.S. National Tuberculosis Association. 1946.

Mortality from tuberculosis in the United States presented in the form of statistical tables and maps.

Le Syndrome de Volkmann. By M. Cahuzac and F. Jung. (Pp. 98. 115 francs.) Paris: Masson. 1946.

A monograph on Volkmann's contracture. Palliative and radical treatments are discussed as well as various theories of the pathology.

L'Hyperfolliculinie. By Max Wallet. (Pp. 354. 480 francs.) Paris: Masson. 1946.

A study of the physical and mental effects of the excessive production of ovarian hormone. Includes extensive bibliography.

Diagnostic Hormonal et Traitements Hormonaux en Gynécologie. By C. Béclère. (Pp. 371. 525 francs.) Paris: Masson. 1946.

A book on hormone therapy for practitioners. Includes a discussion on the physiological effects of the pituitary and ovarian hormones.

La Périartérite Noueuse: Maladie de Kussmaul. By P. Nicaud. (Pp. 125. 255 francs.) Paris: Masson. 1946.

A monograph on the symptoms, signs, and treatment of periarteritis nodosa.

La Tuberculose Rénale Sous L'Angle de la Thérapeutique. By J. Cibert. (Pp. 533. 1,150 francs.) Paris: Masson. 1946.

A monograph on the pathology, signs, symptoms, and treatment of renal tuberculosis. Many illustrations.

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CONTROL OF MEASLES

After a temporary dislocation in the early years of the war measles has again assumed its biennial periodicity, and we are now on the crest of the epidemic wave of 1946–7, with notifications of over 10,000 per week. But measles, like the other childhood fevers, has steadily lost ground as a killing disease during the past half-century, with an accelerated decline in the death rate since 1920, so that the total deaths now number less than 1,000 in an epidemic year, and the case fatality is reckoned around 0.2%. This remarkable reduction in mortality is probably attributable mostly to improved environmental conditions and the better nutrition of young children, but partly, according to Butler,[1] to the delayed age of attack associated with smaller families and partly, no doubt, to the more successful treatment of secondary bronchopneumonia with, for example, the sulphonamides. While mortality has so strikingly declined, morbidity remains unaffected, and probably not more than 10% of children in an urban community escape an attack of measles. A recent analysis[2] of notifications according to age shows that incidence is highest among children aged 3–4 years and next highest among children between 1 and 3 years of age. Most of the serious complications and deaths occur among these younger children, and consequently our efforts should be directed principally towards their protection.

Methods of control may be considered under measures to be adopted in the home, in the day or residential nursery, in the school, and in the hospital. Perhaps the most important single measure is not so much putting the child to bed as soon as the infection is diagnosed as keeping it there until recovery is complete, with sulphonamide therapy whenever there are signs of secondary complications such as bronchitis or otitis. When, as frequently happens, measles is brought into the home by a child at school, younger children should if possible be passively protected by an injection of convalescent measles serum or normal adult serum. A procedure to be recommended is to give complete protection to the infant between 6 months and 2 years of age by an intramuscular injection of 5 ml. convalescent measles serum within five to six days of exposure, counting the appearance of the rash in the primary case as the fourth day. For children aged 3–5 years a dose of 5–10 ml. normal adult serum will in most cases either protect or give a modified attack, according to dosage, potency of the serum, and the day of exposure on which it is given. In a healthy child an attenuated attack is preferable, since it does not usually lead to complications and it gives the child immunity to further attack, whereas a child completely protected becomes susceptible again in three to four weeks' time.

In day or residential nurseries a somewhat similar procedure may be followed. It often happens that infants of 6–18 months are kept separate from the older children, and if this younger group is intimately exposed it should if possible be completely protected, even though it means repetition of the prophylactic injections if infection is again introduced some time later. However, the supply of convalescent measles serum is very limited, and the nursery doctor may find it expedient to attempt modification of the infection in the younger children—that is, between the age of 6 months and 3 years—by the use of normal adult serum, which is available from most of the constituent laboratories of the Public Health Laboratory Service. Gamma globulin in controlled trials with small supplies sent from America has proved to be at least twice as potent as convalescent serum in the prophylaxis and attenuation of measles. We understand that experimental batches of gamma globulin are being prepared in this country, and no doubt as supplies become available this substance, if equally successful, may replace all other sera for passive protection against measles. Apparently it may have an additional advantage in being free from the risk of producing homologous serum jaundice, but it should in fairness be stated that thousands of doses of convalescent and normal serum have been given to young children without any untoward effects. The young child may be as resistant to homologous serum jaundice as he apparently is to infective hepatitis.

The school is probably the most important community focus for the dissemination of measles; the secondary attack rate of measles among pre-school susceptible children aged 1–5 years, when a primary case is introduced to the home, has been estimated at nearly 90%. If, therefore, the age of attack of the primary case at school could be postponed from 5–7 years to 8–10 years the younger children in the household would, with present-day small families, have passed the most susceptible age of 1–3 years. Wells, Wells, and Wilder[3] have shown that the epidemic spread of measles in junior classrooms can be largely prevented by a "ceiling" of ultra-violet light, and controlled studies, sponsored by the Medical Research Council and the Ministry of Health, are now in progress in a number of schools in Southall to test the efficacy of ultra-violet light in preventing the spread of respiratory infections. If the American findings are corroborated the control of measles in schools may make a valuable contribution to the reduction of deaths and complications from this infection.

In recent years many hospital authorities have made increasing provision for cases of measles at the expense of cases of scarlet fever which is now so mild, and of diphtheria which steadily diminishes in incidence. But, as we have previously emphasized,[4] the nursing of children together in measles wards is not without its attendant dangers, of which the most important is secondary streptococcal infection. The respiratory mucosa after attack by the measles virus is very susceptible to bacterial invasion.

[1] *J. roy. statis. Soc.*, 1945, **108**, 259.
[2] *Monthly Bull. Min. Hlth. and Publ. Hlth. Lab. Serv.*, Jan. 1947, p. 2.
[3] *Amer. J. Hyg.*, 1942, **35**, 97.
[4] *British Medical Journal*, 1945, **1**, 300.

and secondary streptococcal infection rates of 50–70% with suppurative otitis media in 10–20% have been recorded in measles wards. Infected dust from bed linen and floors has been incriminated as the main repository of the haemolytic streptococcus in these measles wards, and dust-suppression by oiling floors and bed linen has proved most effective in limiting streptococcal cross-infection.[5] In this issue (p. 209) Begg, Smellie, and Wright report a further controlled trial in the prevention of secondary streptococcal infection by oiling floors and bed linen in a measles ward during the 1945 epidemic. That oiling of the bed linen, done in the hospital laundry with the help and advice of the British Launderers' Research Association, was effective is indicated by the reductions of 80 and 95% of total bacteria and haemolytic streptococci in the air of the oiled ward during bed-making when compared with similar counts in the control ward. However, the streptococcal pollution of the air in the untreated ward was only about one-tenth of that experienced in another hospital during the 1943 measles epidemic, and for this and possibly other reasons latent streptococcal cross-infection remained at a low level; and there were no cases of secondary streptococcal otitis media. This negative finding must not be regarded as a contraindication of dust-suppressive measures, and it is hoped that hospital authorities will arrange further trials of oiled bed-linen in measles wards. Another interesting observation made by Begg and his colleagues was that the prophylactic use of sulphadiazine (daily doses of 0.25–1 g.) was associated with very low streptococcal pollution of the air, a low cross-infection rate, and a low incidence of heavy nasal carriers of the haemolytic streptococcus. Here again further controlled trials are needed, and the risk of breeding drug-resistant streptococci by chemoprophylaxis must be borne in mind.

These measures for the control of measles and its complications will have no obvious effect on the total incidence of the disease, and experience with diphtheria has taught us that only active immunization will reduce morbidity as well as mortality. Future progress in the control of measles will therefore depend on the successful cultivation of the virus and the preparation of an effective vaccine. Some preliminary steps along this road have already been taken in America, and now with a gradual return to peace-time conditions British research workers will doubtless bend their energies to this difficult task.

THIS YEAR'S INFLUENZA

For some years before 1939 influenza in Britain seemed to have settled into a simple rhythm. There was an outbreak every second year, and these outbreaks were alternately large and small ones, so that the major epidemics came every fourth year. These were mainly outbreaks due to virus A.[6] Probably unrelated to their long-term periodicity was last winter's influenza B, so far as we know the first outbreak in this country mainly due to that virus. Virus A had not been much in evidence since the winter of 1943–4. Previously, in 1940–1, virus A, instead of producing the expected epidemic, occurred in mild sporadic infections as a virus of rather low virulence.[7] Last winter, 1945–6, there was no minor outbreak due to virus A, and this made it difficult to prophesy what would occur this winter—a major prevalence, a minor prevalence, or nothing. It is beginning to look as though "a minor prevalence" is the answer.

A heavy incidence of "influenza" has been reported from many schools, particularly in the London area, and this has led to the premature conclusion that the country is on the eve of a major influenza epidemic. This conclusion appears to be remote from the known facts. Sera and throat washings from affected schools and other young communities have been sent for examination to the Public Health Laboratory Service, but not in any unusual quantity. There has been an abrupt increase, however, in the number of specimens of this kind submitted to the laboratories of the National Institute for Medical Research at Hampstead. We understand that virus A has been recovered from a number of outbreaks at certain schools and hospitals. Virus B has not been found.

There is some virus A influenza about in addition to a febrile catarrh of undetermined origin which produces symptoms for some two or three days. Boarding-school communities are particularly affected, but the London County Council schools, for example, record no more absenteeism than is usual at this time of the year. The influenza itself is mild in character and certainly no more severe than the virus B influenza of last year. That the mortality is negligible is well shown by a comparison of the deaths from influenza in the 126 great towns over the first four weeks of this year. The figures were 36, 74, 85, and 92, as compared with 123, 165, 174, and 273 in the first four weeks of 1946. A real epidemic is usually associated with a much more sharply rising curve.

The largest of recent epidemics occurred in 1929, 1933, and 1937, and the figures for these years afford no evidence for the belief that a hard winter will prevent influenza epidemics.[8] The present trend of the deaths from influenza in the 126 great towns during the past few weeks has been following a similar course to that observed in the outbreaks of 1941, 1942, and 1945. In 1941 the deaths continued to rise during the early weeks of the year, and a maximum of 324 was recorded in the seventh week, while in the other two years the deaths never exceeded 90 a week and the heightened incidence was maintained only for a few weeks. All recent epidemics have been restricted to the first quarter, except that of 1939, when the outbreak extended into the sixteenth week. Deaths in the large towns during the past four weeks are less than half the number recorded in the corresponding period of last year. The low number of deaths and the slow increase in the mortality rate during recent weeks do not suggest that the present outbreak will develop into a severe epidemic.

An incidence of a mild disease, particularly on the "under twenties," was also a feature of last winter's outbreak of virus B influenza both here and in Australia. The present outbreak is equally mild, but even if influenza seems to be changing its character, having a lower incidence

[5] Wright, J., Cruickshank, R., and Gunn, W., *British Medical Journal*, 1944, 1, 611.
[6] Ibid., 1945, 1, 209.
[7] *British Medical Journal*, 1943, 2, 717.
[8] Ibid., 1946, 1, 112.

in adults and coming upon us rather less frequently, we had better beware of false confidence, as the virus is clearly an unstable and deceitful agent.

THE MINISTER ACCEPTS

The resolution of the Representative Body agreeing to negotiate with the Minister of Health "provided that such discussions are comprehensive in their scope and that the possibility that they may lead to further legislation is not excluded" was sent to him last week, and on Feb. 1 the Secretary of the B.M.A. received a reply from the Secretary to the Ministry in which he said: "The Minister wishes me to say that he has considered the terms of the resolution and will be glad if the Negotiating Committee will resume discussions with him, in the light of that resolution, at their early convenience."

In discussing the position of the Minister in relation to the Association's offer, *The Times* considered that Mr. Bevan could not pledge himself beforehand to any new legislation since this would impose an obligation in advance on Parliament, which has only recently approved the National Health Service Act. The essential requirement, *The Times* states, is the resumption of discussions. "Then, if issues should arise which made Parliamentary intervention indispensable, it would be for Mr. Bevan and his colleagues in the Cabinet to consider what action might be appropriate." This would seem to provide the answer to those who still think that Parliamentary intervention is constitutionally impossible or unlikely.

The Negotiating Committee meets on Friday (Feb. 7) to consider the resolution of the Representative Body and resolutions from the other constituent bodies. The three English Royal Colleges and the Society of Medical Officers of Health advocate negotiation on regulations without any proviso. Of these bodies only the Royal College of Physicians had the opportunity of revising its resolution in terms of that of the Special Representative Meeting, which has been adopted provisionally by the Royal College of Surgeons of Edinburgh, by the Royal Faculty of Physicians and Surgeons of Glasgow, and by the Association of the Honorary Staffs of the Major (Non-undergraduate Teaching) Voluntary Hospitals of England and Wales. The Society of Apothecaries affirms its loyal support of the final decision of the B.M.A., while the Medical Women's Federation states it has no mandate for saying Yes or No.

FOOD FOR INVALIDS

Food rationing for invalids presents many difficult problems for the doctors looking after them, and for those responsible for seeing that available foodstuffs are fairly and evenly distributed throughout the community. Recent correspondence in this *Journal* has shown how disturbed many general practitioners are by what they regard as interference with their proper function of looking after sick persons. Elsewhere in this issue we publish correspondence between Sir Edward Mellanby, in his capacity as Chairman of the Food Rationing (Special Diets) Advisory Committee of the Medical Research Council, and the Minister of Food; correspondence between the Secretary of the B.M.A. and the Ministry of Food; and a statement issued from the Ministry on the procedure for dealing with applications for extra rationed foods on medical grounds.

Even those most critical of recent happenings will admit the justice of Sir Edward's claim that the work of his committee during the past seven years under four successive Ministers of Food has been a noteworthy achievement—noteworthy, among other reasons, for the small volume of complaints directed against this branch of the Ministry's work. Sir Edward describes in his letter the general principles which have been followed by the committee and goes on to say: "These are hard principles; and the members of my committee, while appreciating their necessity, have disliked applying them." He asks the Minister whether the services of his committee are still required and whether "it is necessary for them to continue to be guided by the same strict principles." In his reply, Mr. Strachey, the Minister of Food, asks the committee to continue its work and adds: "I do think that when your committee sits in what I might term its function as a court of appeal against its own regulations as applied by my divisional food officers, it might now begin to take a more lenient view of individual applications." The committee will, no doubt, be relieved by this ruling, which is the final outcome of the publicity given in this *Journal* to instances of the application of what Sir Edward has called "hard principles." The reaction of responsible lay opinion is well put in last Sunday's *Observer* in this editorial comment: "When one considers the amount of rations available in the country for emergency, for visitors, and so on, it is intolerable that a man dying in pain should be denied the few ounces of butter deemed necessary by his doctor in order to give him some relief. This kind of administration can only be described as callous bureaucratic pedantry and is utterly offensive to normal human beings. Are we to send our rationed food to the Germans while our own cancer-cases are denied a necessary morsel?"

HEALTH IN HONG KONG

The present position of Hong Kong was recently reviewed by a special correspondent of *The Times*,[1] who urged the importance of "a five-year or ten-year plan for the social and economic development" of this "tiny colony." Large-scale reforms would need to be undertaken from local resources, but outside aid would be particularly valuable in the sphere of health and education. Perhaps the greatest single health problem is that of nutritional deficiency. Up to 1941 Hong Kong enjoyed a relative economic prosperity and freedom from war. Yet its infantile mortality rate, which was 345 per 1,000 live births in 1939, was one of the highest in the world.[2] Vitamin B, and mainly B_1, deficiencies were widespread and due to the consumption of imported highly milled rice. Vitamin C deficiency was less common and rarely encountered, except in association with a deficiency of vitamin B_1. Beriberi was the second highest cause of death in Hong Kong in 1940, and B avitaminosis, either latent or manifest, in lactating women caused in their infants a form of beriberi so acute and so lethal that the term "human milk intoxication" was suggested for it.[3] Ironically enough the Japanese occupation led to some improvements in nutrition. Long-stored stocks of rice were exhausted and relatively fresh rice was issued, even though severely rationed. Centuries-old food fads and prejudices were abandoned by a hungry population, and people grew their own vegetables and kept hens and rabbits even in flats.

[1] *The Times*, Jan. 14, 1947, p. 5.
[2] *British Medical Journal*, 1945, 2, 468.
[3] Ibid., 1944, 2, 590.

Developments since the defeat of Japan and the setting up of a British Military Administration are discussed by Dr. Lydia Fehily at p. 220 of this issue. One year of British reoccupation has seen a considerable improvement in the health of the population generally, reflected in a steady reduction in the mortality figures. It seems likely that the infantile mortality for 1946 will be approximately 100. There is cause for congratulation here but not for complacency. Dr. Fehily shows that mild and chronic vitamin B deficiency still existed in the Colony to the extent of 36% in a home for foundlings, 15.6% in an infant welfare centre, and 4% among the children attending centres for milk distribution. "Human milk intoxication" had virtually disappeared, but ariboflavinosis was more evident than in earlier surveys.

But much remains to be done. Some such plan as *The Times* suggests will, if it is to be effective, need all the assistance that can be given from both official and voluntary sources. No official policy has yet been defined, but it is significant that the Nutrition Conference in Singapore, presided over by Lord Killearn, recommended that "there should be laws or regulations to prevent the high milling of cereals to a degree dangerous to the health of the public." The British Red Cross Society did much valuable work during the years of occupation and immediately afterwards, and it is not likely that its work will diminish. It is good to know, too, that the Hong Kong Branch of the British Medical Association is again active. At its meeting last week the Council of the B.M.A. approved the urgent requirement of a financial grant to enable the Branch to make good the equipment lost during the Japanese occupation.

WORLD FOOD COUNCIL

Ending malnutrition throughout the world requires the solution to two basic problems: more foodstuffs must be grown, and the poorer nations must increase their purchasing power. Before the war local excesses of foodstuffs commonly occurred in the producing countries, especially in the New World; the undeveloped countries, whose people lacked the purchasing power conferred by industrialization, were powerless to relieve the malnutrition that assailed them. Farmers burnt their wheat where it stood, and planters spilt their coffee beans into the sea.

In September, 1946, at the conference held at Copenhagen by the Food and Agriculture Organization (*Journal*, Sept. 7, 1946, p. 334), Sir John Boyd Orr proposed the setting up of a world food board to stabilize food prices and establish reserves. Most countries, including Britain, considered that the expense of implementing this scheme would be prohibitive: the Preparatory Commission of the F.A.O. therefore worked out an alternative, and they have now issued their Report. The Commission took the realistic view that agreement between governments is the fundamental necessity, and that the basis of international arrangements should be the expansion of consumption, not the restriction of output. It also reiterated the need for industrial development in backward regions. The most important proposal, however, is the establishment of a World Food Council, whose functions would be to supervise the accumulation of basic food reserves by individual nations, particularly the food producers, and of buffer stocks of commodities subject to seasonal or cyclic variations. The food reserves, though held nationally, would be used internationally in times of famine. The financial arrangements necessitated by such a scheme imply that each country must have a sound economy, so that international credit may be obtained through various channels, such as the International Bank for Reconstruction and Development.

The Commission's scheme may be seen, therefore, as inspired by Sir John Boyd Orr's proposals but restricted by the nationalism that is still one of the most potent causes of wariness in world affairs. The World Food Council will lack the supra-national power proposed by Sir John for his food board, but its limited scope may commend its virtues more readily to nations determined to retain control of their trading arrangements. Sir John is quoted by the *Observer* (Jan. 26) as having said: "The world food board was an ideal. This is half-way towards it and will do all that the board would have done if the governments will do their duty."

POSTGRADUATE TEACHING IN FORENSIC MEDICINE

The University of Glasgow will soon be inaugurating postgraduate courses in forensic medicine. These courses are intended for those practitioners whose duties require, or would be greatly assisted by, a more extended knowledge of the subject. The provision of these new facilities has been prompted by the fact that continuing study and research has widened the scope of forensic medicine, which should now take its proper place in any scheme for postgraduate education. It is intended to provide a general treatment of medico-legal practice. All the medico-legal activities in the City of Glasgow will be co-ordinated to this end with the co-operation of the university, the Scottish Home Department, the Crown authorities, the corporation of Glasgow, and the chief constable.

The practical outcome of this arrangement will be a liaison between the department of forensic medicine in the university and the scientific bureau of the police, the city mortuary, the city analyst's department, and the sheriff's procurator fiscal. Thus, although remaining under the unchanged control of the police and the corporation respectively, these bodies will co-operate with each other and with the university in activities of common concern and in giving every assistance so far as is consistent with official safeguards in the work of teaching and research. This will include lectures by specialists of the police bureau, practical work in their departments, post-mortem studies, and attendance at the various courts to learn procedure and the technique of giving evidence. By permission of the corporation and the Scottish Office, the principal medical officer of the City of Glasgow police is an assistant in the department at the university, and he, with the members of his medical staff, will participate in the general scheme with special regard to the mortuary side of instruction. Such facilities with those already available in the university will lay the foundation for a medico-legal institute in Glasgow. Teaching will be planned scientifically, bearing in mind the need for a higher general standard in the whole range of medico-legal work. Postgraduate instruction will be made available for those who want a "refresher" course and for those who are interested in some special branch of the subject. Courses of short duration will be arranged to meet the individual requirements of those on leave from overseas. Facilities for research will also find a place in the new scheme, one of the important objects of which is the full interchange of knowledge and facilities in the interests of the progressive advancement of new methods and their practical application in the investigation of crime. Arrangements will be made for instructing members of the medical profession who wish to specialize in forensic medicine or who desire to study certain aspects of the subject. Courses will also be

established for senior members of the police and for others whose work demands a knowledge of criminology. Wider scope for co-operation between the medical profession and the police and legal authorities is envisaged by the inauguration of this new scheme at Glasgow.

SUPERIOR VENA CAVAL SYNDROME

Obstruction of the superior vena cava is a subject which lends itself to study by phlebography and measurements of venous pressure. Ehrlich, Ballon, and Graham[1] reviewed the literature in 1934 and collected 309 cases. About 35% were caused by aortic aneurysm, 50% by primary or metastatic thoracic neoplasms, and the remaining 15% by a variety of rare causes, some undetermined.

Hussey[2] points out that a fistula between an aortic aneurysm and the superior vena cava may lead to the obstruction. Armstrong, Coggin, and Hendrickson[3] collected 100 cases of this type of fistula, including two of their own, and seven further cases have been reported since 1939. In Hussey's 35 cases there were two examples of the condition, and it seems probable that its importance has been insufficiently recognized. In these cases the onset is explosive, with dyspnoea and oedema and cyanosis of the upper part of the body. The diagnosis depends on the sudden onset of severe manifestations of the superior vena caval syndrome in a patient with aortic aneurysm. Signs ordinarily associated with arteriovenous fistula, such as thrill, bruit, and wide pulse-pressure, are not usually found.

Phlebograms were prepared for 13 of Hussey's cases, using diotrast and thorotrast. Injections were made into a suitable vein in one arm, or simultaneously into both arms, or into the external jugular vein; 20 to 30 ml. was injected rapidly through a wide-bore needle. Phlebograms can demonstrate with certainty the presence of an obstruction during life, sometimes in cases in which it might otherwise remain undetected. The level of the obstruction can be shown, and secondary thrombosis extending into the innominate, subclavian, or jugular veins is also revealed.

Venous pressure readings are interesting, and comparison of the pressure in the antecubital and femoral veins is important in diagnosis. The pressure in the antecubital vein should always be significantly higher than that in the femoral vein. The increased volume of blood entering the inferior vena cava by way of collateral vessels is not in itself sufficient to cause elevation of the pressure in the femoral vein, and if it is found to be higher than normal some factor other than obstruction of the superior vena cava is responsible. Repeated measurements of venous pressure are valuable for following the course of the syndrome. Lowering of the venous pressure indicates that the collateral circulation has become more adequate or, in the case of a radio-sensitive mediastinal tumour, that the reduction in size of the tumour by *x*-ray therapy has resulted in a lessening of the obstruction. Hussey states that undue emphasis has been laid upon thrombosis of the superior vena cava and that investigation shows it is rare and is seen for the most part in cases of neoplasm. In malignant cases, however, it should always be remembered that a sudden onset of severe obstructive symptoms with oedema, cyanosis, and dyspnoea strongly suggests that thrombosis has occurred. If this is so it is clear that radiotherapy is scarcely likely to be of benefit. Most patients succumb fairly rapidly to a sudden obstruction of this type. The end is hastened by oedema of the upper air passages, and by the high pressure in the cerebral veins, which causes drowsiness, stupor, and occasionally convulsions and loss of consciousness. In cases of the superior vena caval syndrome phlebography should certainly be made use of, and the method might with advantage be applied more often.

1 *J. thorac. Surg.*, 1934, **3**, 352.
2 *Amer. Heart. J.*, 1946, **31**, 1.
3 *Arch. intern. Med.*, 1939, **63**, 298.

TOTAL PANCREATECTOMY

Total pancreatectomy is an operation which is likely to daunt the most fearless patient and to try the surgical prowess of the operator to the uttermost. The surgeons of the Mayo Clinic[1] are therefore to be congratulated on being able to report success in four cases—one ablation for carcinoma of the head of the gland, one for chronic pancreatitis, and two for hyperinsulinism.

The report of the metabolic studies carried out on the patients after recovery from operation is of as much importance as the operative details. From animal experiments intractable steatorrhoea, gross fatty changes in the liver, and severe diabetes were to be expected, but it has been shown that the external secretion of the pancreas is not essential to life; and the internal secretion can be replaced easily. The diabetic state became established within a few hours of operation, but with the striking feature of control by less than forty units of insulin daily. Even the cancerous patient, who had been a diabetic for some years, required only a further twenty units daily. The authors are careful not to make any inference on the aetiology of diabetes from their few cases, but the significance is obvious. All the patients had as many as three large motions daily containing about 30% of the calorie value of the food taken and excess nitrogen and fat residues. All the cases had well-balanced diets containing about 270 g. of carbohydrate daily, and fatty livers with hypocholesterolaemia did not develop. It is recommended that all such patients should be given high calorie diets with an abundance of eggs and offals which are rich in choline or other lipotropic substances. The excess of fat and nitrogen in the faeces could be reduced by 40–50% by giving 15 g. of pancreatin in enteric-coated capsules daily.

American surgeons are not alone in their interest in this field of surgery, for in 1942 Gordon Taylor[2] recorded several examples of successful partial pancreatectomy by British surgeons, and in stressing the relatively low malignancy of pancreatic growths he made a plea for the wider use of surgery. Since then cases have been reported by Watson[3] and Pannett[4] for carcinoma and by Oakley[5] of an almost total pancreatectomy for hyperinsulinism. Pancreatectomy is always likely to have a high mortality in the cachectic cancerous patients; but in hyperinsulinism 80% of adenomata occur in the tail of the gland, and partial pancreatectomy should be tried first. Increasing numbers of successful total pancreatectomies may be anticipated with the aid of vitamin K, blood transfusion, and sulphonamides, and if the surgical treatment of malignant jaundice becomes firmly established all will be indebted to the present pioneers in this formidable operation.

We regret to announce the death of Dr. Arthur Whitfield, Emeritus Professor of Dermatology, King's College, London.

Dr. F. Avery Jones, F.R.C.P., will deliver the Goulstonian Lectures before the Royal College of Physicians of London, Pall Mall East, S.W., on Tuesday and Thursday, March 18 and 20, at 5 p.m. His subject is "Haematemesis and Melaena."

1 *Proc. Mayo Clin.*, 1946, **21**, 25.
2 *British Medical Journal*, 1942, **2**, 119.
3 *Brit. J. Surg.*, 1944, **31**, 368.
4 Ibid., 1946, **34**, 84.
5 Recent discussion at Association of Physicians, *Quart. J. Med.* (In press).

FOOD RATIONING FOR INVALIDS

CORRESPONDENCE BETWEEN THE SECRETARY OF THE B.M.A. AND THE MINISTRY OF FOOD

Dear Sir,

A number of cases have recently been reported by medical practitioners in which their recommendations for additional food allowances to patients under their care have either been rejected by your Ministry, or granted tardily and partially, after what appears to have been an inadequate examination of the medical evidence produced by the practitioners concerned.

These reports have created considerable disquiet among both the medical profession and the public. The Association would therefore be glad to have a detailed statement on how applications for extra rationed foods for individual patients, especially those submitted under Clause 19 of MED.2, are at present being dealt with, both within the Ministry and within the Food Rationing (Special Diets) Advisory Committee of the Medical Research Council.

Yours faithfully,

Jan. 7. CHARLES HILL.

The Secretary, Ministry of Food.

Sir,

In reply to your letter of Jan. 7 asking that the British Medical Association may be furnished with a detailed statement about the manner in which applications for extra rationed foods for individual patients, especially those submitted under Clause 19 of MED.2, are at present being dealt with, both within the Ministry and within the Food Rationing (Special Diets) Advisory Committee of the Medical Research Council, I am directed by the Minister of Food to send you the accompanying statement on the subject. I am also directed to enclose a copy of a Question and Answer in the House of Commons on Jan. 22, 1947.*

I am, Sir,

Your obedient Servant,

Jan. 28. D. C. V. PERROTT.

STATEMENT BY MINISTRY OF FOOD

Procedure for Dealing with Applications for Extra Rationed Foods on Medical Grounds

(1) No application from a member of the public for extra supplies of rationed foods on medical grounds is considered by the Ministry unless it is supported by a certificate signed by a registered medical practitioner. The only exception to this rule is that certified midwives and health visitors may certify the condition of an expectant mother. A medical practitioner's certificate of his diagnosis of his patient's complaint is always accepted by the Ministry's advisers without question.

(2) The Food Rationing (Special Diets) Advisory Committee[1] of the Medical Research Council has made certain recommendations which are embodied in the instructions issued to all officers of the Ministry who deal with applications made on medical grounds and, as far as is necessary, in the Ministry's pamphlet MED.2 which is issued for the information of all medical practitioners.

(3) These recommendations include: (*a*) a schedule of the classes under which extra supplies of milk and eggs may be authorized by doctors (MED.2, paras. 1 and 12); (*b*) a list of conditions which qualify for extra supplies of certain named rationed and controlled foods (MED.2, para. 18); (*c*) a list of commodities, extra supplies of which are not, in the opinion of the advisers, required for the treatment of any complaint (MED.2, para. 20); (*d*) a list of complaints for the treatment of which our advisers have considered and advised against granting applications for extra foods other than milk and eggs; and (*e*) a list of complaints for which certain extra foods may be granted, either outright or pending the final decision of the advisers.

(4) Local Food Offices are required to adhere generally to these instructions, but an overriding instruction requires them to refer to higher authority any case in which a doctor insists that extra foods are necessary for his patient and cases of any type which have not, to the knowledge of the Food Executive Officer, been considered by the advisers. It is also understood by all concerned that in cases of emergency Food Executive Officers may use their discretion in granting extra foods pending a decision being made.

ROUTINE CASES

(5) The procedure in routine cases is for the form R.G.50 or medical certificate to be scrutinized on presentation at the Food Office for obvious clerical errors, illegible signatures, and anomalies such as the classification of a patient for extra milk under class 1 (c) without any classification for extra eggs. Queries of this nature are, as far as possible, dealt with immediately and the wishes of the doctor ascertained. Food Executive Officers are required to maintain an up-to-date list of medical practitioners in their areas for the purpose. Applications on which no questions arise are granted immediately, and the necessity for speed in arranging for patients to be able to get their extra supplies has been stressed. An instruction requires Food Executive Officers to arrange delivery of priority supplies of milk by telephone if necessary.

(6) Cases which must be referred to higher authority are forwarded immediately, details being given by telephone if necessary, and, when applicable, extra supplies are granted at once either in accordance with the instructions that have been issued or under the Food Executive Officer's powers of discretion.

SPECIAL CASES

(7) Applications for extra foods, or for extra quantities of foods, that are not covered by the advisers' standing recommendations and Ministry instructions are all treated as special cases, in addition to any applications which are specifically made under paragraph 19 of MED.2. Food Executive Officers have no powers of decision and the application must be forwarded without delay to Divisional Food Officers. Divisional Food Officers are not empowered finally to reject any application that is supported by a medical certificate, but they are informed, both by their experience and by information passed on to them by Headquarters, of the requirements and views of the advisers, and, therefore, they ensure as far as possible, by reference back to Food Executive Officers or doctors, that applications include all the required information. This procedure does, of course, in practice dispose of a number of applications. Divisional Food Officers instruct Food Executive Officers as may be necessary in the exercise of their discretionary powers.

(8) In general all non-routine cases are received at the Headquarters of the Ministry, where the department concerned is in continuous and close touch with the Ministry's advisers through the Ministry's Scientific Adviser's Department.

(9) Since the appointment of the Food Rationing (Special Diets) Advisory Committee in January, 1940, a number of precedents have been established, both on groups of similar cases which have been individually considered by our advisers and on general rulings that have been given.

(10) Applications which are clearly covered by precedent are therefore promptly granted or rejected, or, if necessary, further information is requested. Any case, however, in which there is the slightest doubt whether an exact precedent has been established, cases in which the applicant is dissatisfied with a previous ruling, and, of course, all cases specifically made under paragraph 19 of MED.2, are referred to the Scientific Adviser's Department for special consideration by the Food Rationing (Special Diets) Advisory Committee.

(11) The Food Rationing (Special Diets) Advisory Committee advises the Minister on the best disposal of the limited amount of foods available for invalids. In respect of the above special applications referred to them by the Ministry they advise on the priority to be accorded to each on the basis of the statement of the particular case set out in the medical certificate and of the foods available. Applications from England, Wales, and Northern Ireland are sent in the first instance to Prof. H. P. Himsworth in London; applications from Scotland to Prof. L. S. P. Davidson in Edinburgh. If the application concerns a matter upon which the Committee has already given general guidance a written statement of the reasons for, or against, granting the particular application is prepared and, if agreed to by another member of the Committee, forwarded to

* See "Medical Notes in Parliament," *Journal*, Feb. 1, p. 204.

[1] Sir Edward Mellanby (Chairman), Prof. L. S. P. Davidson, Sir Francis Fraser, Lord Horder, Dr. R. D. Lawrence, Prof. R. A. McCance, Dr. Norman Smith, Prof. J. C. Spence, Prof. H. P. Himsworth (Secretary), Dr. M. L. Rosenheim (Assistant Secretary).

the Ministry of Food. If the application raises a new point it is referred to the whole Committee, advice on the general principle being, if necessary, obtained from professional bodies, or, in the case of unusual illness, from other persons with expert knowledge.

GENERAL

(12) The necessity for the minimum of delay in making or obtaining a decision on every application and in putting the decision into effect has been repeatedly stressed to all concerned.

(13) The Minister accepts full responsibility for the action which is taken in relation to all applications. In practice the Department always accepts the advice which is given and no officer of the Ministry is permitted to adjudicate on the medical evidence given in any case. This does not prevent them, however, putting into effect the known views of the Food Rationing (Special Diets) Committee, but the principle which has been followed is that all lay officers who handle applications for extra foods on medical grounds do so essentially in the capacity of a Secretariat for the Ministry's medical advisers.

CORRESPONDENCE BETWEEN SIR EDWARD MELLANBY AND MR. STRACHEY

Dear Minister,

I am writing to you in my capacity as Chairman of the Food Rationing (Special Diets) Advisory Committee of the Medical Research Council. As you know, this Committee was formed seven years ago at the request of the Minister of Health, the Secretary for Scotland, and the then Minister of Food, Mr. W. S. Morrison. Since then this same Committee has functioned continuously under successive Ministers—Lord Woolton, Lord Llewellin, Sir Ben Smith, and yourself—and until the last few weeks there have been few complaints directed against this branch of your Ministry's work. I think you will agree that this is a noteworthy achievement considering the onerous, and often invidious, duties of the Committee, and is in marked contrast to experience in the first European war when invalid and other claims were a major difficulty in working food rationing plans and even at one stage threatened to wreck the scheme. When I have reviewed the hard, disinterested, and very competent service given by its members, and in an outstanding degree by its Secretary, Prof. Himsworth, and also by Prof. Davidson in Scotland, I could not help feeling surprised at how little their work was known or understood. There can be few instances in which the work of a whole department of a Ministry, apart from routine administrative duties, has been planned and carried on for so long by an honorary committee entirely outside the Ministerial organization itself.

The Committee has not only advised your Ministry on thousands of individual appeals against the rationing regulations for invalids, on appeals from commercial food interests against restrictions on their supplies, given authoritative opinions on requests from industrial bodies and trade unions for special consideration, undertaken negotiations with professional bodies on behalf of the Ministry, but it has also entirely devised the present system of invalid rationing down even to its administrative details.

I am sure you will appreciate that the members of the Committee, being busy and distinguished men, are beginning to wonder how long their services will be required. They appreciate, of course, that no single medical man could undertake the functions which they now discharge as a body; and I, as their Chairman, may perhaps be permitted to add that I know of no other group of men in this country who have either the status or the knowledge to take their place. Realizing these points, and knowing that their duties will not continue indefinitely, the Committee would no doubt be prepared to continue, but they do feel in need of reassurance on two points.

First, the Committee would like to know if you still desire their services. If so, they would appreciate a public statement that the Government has confidence in them. Perhaps you might consider it appropriate to make such a statement in the House when you deal with the matter of invalid rationing. It would certainly be appropriate, although I realize it might be impracticable, if past Ministers of Food were to associate themselves with such an expression of appreciation.

Secondly, the Committee would like to know whether the situation regarding food supplies is still such that you would wish them to continue on the same strict principles which were necessary under the exigencies of war. Hitherto, such has been the food situation that the Committee has had to formulate its advice in accordance with the following general principles:

(*a*) That extra rations should only be granted to invalids on the grounds of proven therapeutic necessity;

(*b*) that extra rations could not be spared for comforts;

(*c*) that, in deciding between competing claims for the limited supplies of food, preference should be given to those categories of invalids who are capable of being restored to health, or preserved, by means of diet, as active workers;

(*d*) that extra rations should not be granted on vague general grounds, such as debility or general ill health, but only when there were precise indications that certain foods were specifically necessary for the patient's treatment;

(*e*) that only in exceptional cases could the Committee advise you to exercise your prerogative of granting compassionate rations.

These are hard principles; and the members of my Committee, while appreciating their necessity, have disliked applying them. As physicians they know that, although the extra rations desired by the patient may be of little or no material benefit to him, the refusal of such rations may cause very real psychological distress. But because of the food supply situation they have had no option in such cases but to advise refusal. Are they to understand that, if you still desire their services, the food situation is still such that it is necessary for them to continue to be guided by the same strict principles?

Yours sincerely,

Jan. 9. E. MELLANBY.

Dear Sir Edward Mellanby,

Thank you for your letter of Jan. 9, to which I hasten to reply.

Let me say at once that I value intensely the work of yourself and your colleagues of the Food Rationing (Special Diets) Advisory Committee of the Medical Research Council. I do not see how any Minister of Food could carry on the medical side of food rationing without the help of such a body. As you say, it is a unique but exceedingly valuable feature of the present arrangement that an independent honorary committee entirely outside the Ministerial organization itself is responsible for this side of our work. I also agree with you that the present membership of the Committee is authoritative and eminently fitted to perform its duties. I welcome the opportunity to make these views public, which will be given me by a Question put down by Sir Ernest Graham-Little which I shall be answering in the House of Commons next Wednesday, Jan. 22. I need hardly tell you that I do desire the continued co-operation and assistance of the Committee. I realize the arduous and self-sacrificing work which it has performed, but I must appeal to the Committee to continue to perform its functions while our food difficulties continue.

Finally I come to the points raised by you as to whether some relaxation of the very stringent principles under which the Committee works might not now be permitted. Unfortunately, the food situation, especially in regard to the particular foodstuffs which I take it are most often recommended, such as butter, eggs, and meat, has not yet improved. In all the circumstances, I am inclined to think that we cannot yet make any marked changes in the terms of reference of your Committee. On the other hand, I do think that when your Committee sits in what I might term its function as a Court of Appeal against its own regulations as applied by my Divisional Food Officers, it might now begin to take a more lenient view of individual applications; and I would trust that such a relaxation would help your Committee in its arduous and often unpleasant work.

It is, of course, still vitally important to prevent a general relaxation in the granting of extra foodstuffs to patients, such as did tend to occur this autumn in the case of milk. It would undermine our entire rationing system if it became possible to obtain, say, double the normal milk ration by means of a complaint to a general practitioner about feeling over-tired or other undefined symptoms.

Yours sincerely,

Jan. 14. JOHN STRACHEY.

Correspondence

Medical Education under the Act

SIR,—Among other matters to be discussed with the Minister of Health about the new Health Service should be the payment of medical education for future doctors. It is generally admitted that the sons and daughters of doctors are peculiarly fitted to follow their parents' profession. It is anticipated that there will be a general reduction in the income of general practitioners, and there will also be a loss of capital associated with the buying and selling of practices. It is already a great financial strain on a doctor to educate his children at a university, and unless the Government is prepared at this stage to express the intention of financing the medical education of suitable entrants, there will be a great reluctance on the part of the general practitioner to enter the new Service.

There is no suggestion that such grants should be limited to the children of doctors, but open to all suitable candidates. It might be argued that the already expressed policy of the Minister of Education to grant aid where necessary for university education for all purposes will include medical education. This county (Denbigh) has not shown any evidence of its intention to implement the scheme, whereas Glamorgan gives generous grants. Unless these grants are universal there will be difficulty in obtaining doctors to practise in areas where educational facilities are poor.—We are, etc.,

TREVOR HUGHES.
ENID HUGHES.

Ruthin, Denbighshire.

National Health Service Act

SIR,—With the National Health Service looming ahead and the uncertainty throughout the whole profession, it appears a small matter that the Association in the years which lie behind us has interested itself so little in the financial welfare of the country practitioner, particularly such as labour in sparsely populated districts. Here twenty visits may be a hard day's work; to visit one panel patient may be half a day's work.

The National Health Insurance pays about £50 mileage for about 500 patients scattered over the hillsides and along broken cart roads, and for dressings, drugs, and dispensing about £60. To such as us the National Health Service can offer nothing worse financially than we already have. Could anyone be surprised if we voted for it? Yet since we elected to labour in the front line of civil practice, with rattling, broken-down cars and draughty, servantless houses in remote country districts our values must differ from those of the town practitioners. Perhaps we value freedom more highly, and when we voted against the National Health Service it was not because of fear of financial loss but because we dreaded to be enmeshed in a colossal Government machine.—I am, etc.,

Haydon Bridge, Northumberland. RICHARD BELL.

SIR,—Let us beware before it is too late. We are indeed faced at this very moment with a veritable "medical Munich," which some of your correspondents in the *Journal* of Jan. 25 so rightly fear. The Council's resolution of Jan. 15 is the first sign of weakening; it is the thin end of the wedge; the Council should adhere to its previous resolution of Dec. 11. If we give in now we are lost, when, if only the profession would unite, we could so easily win.

We have been accused by the Press of flouting the Government. Surely it is our bounden duty to flout the Government if we think they are guilty of perpetrating evil. Perhaps if more people had flouted the Government and listened to one of our greatest statesmen in the thirties we might have avoided this last war. Many newspapers seem to think it is our duty to collaborate with the Government at all costs; yet it was this same Press who suppressed or changed the communications of our foreign correspondents in Berlin before the war, who were trying their hardest to enlighten the people of this country how vigorously the Germans were preparing for war. Are we again to be ruled or swayed by the self-same Press?

The three Presidents of the Royal Colleges have written to Mr. Aneurin Bevan. Why, one may ask, did they do this? Had they a mandate from the profession to do so? Are they not going behind the back of the B.M.A., who have a mandate from the profession and who have decided their policy? They say that a refusal to negotiate may lead to an impasse and they wish to do what they can to prevent such an impasse arising. Sure, those who voted "No" earnestly desire that an impasse should arise, otherwise nothing can change the main provisions of the Act.

Mr. Bevan says the Act is law and "within its terms I can negotiate freely." What does this mean? It means that he will not and cannot alter the main provisions of the Act. That is to say he will not and cannot allow the buying and selling of practices. No amount of negotiation can change this. Once we have sold our practices to the Government we become Civil Servants. Why should £66 million of the taxpayers' money be spent on buying up practices in order to abolish the freedom of the doctor without any obvious advantage to the community? Would it not be better to spend this money on research into cancer and tuberculosis and other terrible diseases? All Governments have been niggardly in their grants to research.

Many thinking people are looking to the medical profession to stop this national deterioration that is ensuing from the Government's policy of nationalization at all costs. If we remain united with firm resolve we can do this, as Mr. Bevan says no National Health Service Act can function without the full co-operation of the doctors. Mr. Bevan has stated his terms. Let us state plainly our terms. We will negotiate with Mr. Bevan, nay, we will welcome negotiations with Mr. Bevan, when, and not until, he abolishes the "five impossible clauses" so aptly named in the *Journal* (Jan. 18, p. 110) by Dr. A. E. Moore—namely: (1) Basic salary. (2) Refusal to allow an appeal against the Minister's decision in case of dismissal. (3) The direction of doctors. (4) The most important: the refusal to allow the buying and selling of practices. (5) The penal clauses.—I am, etc.,

Mansfield, Notts. HUGH TATE.

*** The day after this letter was written the Representative Body passed the Council's second recommendation.—ED., *B.M.J.*

The Act and Freedom

SIR,—May I say how fully I endorse all Dr. Sybil Tremellen says in her letter (Jan. 25, p. 156)? Is anyone so simple as to imagine that this Government is so concerned about the health of the nation that at all costs this Health Act must be forced upon the country? The health of the country is extraordinarily good considering the privations and hardships we are still subject to. That there is a shortage of hospitals beds and of staff is well known, but that is the result of the war and labour shortage and has nothing directly to do with the medical profession. No, the real reason is the Government's determination to nationalize the whole country, including the medical profession.

An alarming aspect of the whole thing is the way the trade unions are getting, if they have not already got, control of the Government, and this must surely make medical men pause to consider whether they are prepared to place their professional honour and duty to their patients in the power and under the direction of trade union bosses. Anyone who will take the trouble to read K. G. W. Ludecke's book, *I Knew Hitler*, will observe the same sinister influences at work—at first, smug benevolence and frothy promises, and then, once the sheep within the fold, the whip and curb chain. It is not too late to avoid this tragedy, but we must act together and not waver or compromise over our essential points.—I am, etc.,

Burwash, Sussex. HOWARD M. STRATFORD.

The Plebiscite

SIR,—Current professional feeling appears to be a mixture of frustration over the result of the recent plebiscite and hope that in the remaining time before the N.H.S. Act comes into force we may yet see some important modifications. The latter hope, however slender, must lead us to an examination of the cause of our failure to express any united opinion in the result of the plebiscite. Undoubtedly this was due in part to the particular form it took; but after a couple of years'

working up to the enormous majorities in favour of B.M.A. policy that were obtained at the central meetings, it must have been a profound disappointment to many that the profession as a whole did not come forward with the same united endorsement of official policy that it had just given previously to the N.H.I. representatives.

Both in the Government Act and in the B.M.A. "Principles" it is clearly recognized that participation in the future Medical Service is left to the choice of the individual doctor. It therefore follows that both Government and B.M.A. are prepared to leave the final effect of their respective policies to be expressed by the independent decision of each doctor to enter or refrain from joining the Service. That being so, a *bloc* of strong united support for any particular policy could only be obtained by the greatest possible decentralization; and it was obvious that whereas the Government might hope to achieve final acceptance of their Act without any very large initial acceptance of it by the profession, effective opposition could not succeed without a large and firmly united majority. The first step was therefore to ascertain what was the opinion of members of the profession on all important matters relating to the reform of the medical service. For this purpose was issued the now almost forgotten questionary. On that should have been founded the official B.M.A. policy. Possibly a further referendum would have been necessary at a later stage, but by such democratic method, with a little give and take on all sides, there could have been built up a large and united majority which knew for what it fought and loved what it knew. That preliminary reconnaissance was a lot of use to successive Ministers of Health, but the pundits of the B.M.A. forsook these democratic beginnings and started what I referred to at the time as a "rearguard action" by the old guard in a gradual retreat from the *status quo*. Rightly or wrongly an enormously wide front had to be defended when both sides knew that the main body on the B.M.A. side would not be prepared to defend the whole position when it came to the final showdown. By yielding a little ground to the old Conservative regime a tolerable peace might have been signed, but that opportunity was lost.

The final phase saw almost unanimous resolutions at B.M.A. meetings in favour of "Principles," which still covered an immense area of opposition to the Government. There was an appearance of democracy, but some of us knew only too well that in fact all the support and impetus were centrally generated and that there was still in existence no more reliable index of the reactions of a large part of the profession than was provided by dusty copies of the *Journal* report of the questionary. Those who felt that professional and public support should and could be consolidated round the one important issue of ministerial control were swamped at meetings or even jettisoned, until the illusion of a united opposition to a number of well-known controversial clauses in the Act seemed complete. Knowing that the balance still lay in the hands of a majority whose voice had not been heard since the questionary, the Government ignored B.M.A. opposition. It must be said that the B.M.A. should not have lost touch with or gone ahead of the rank and file, but let it not be forgotten that if a large proportion of the profession was not consulted between the questionary and the plebiscite, all who failed to come and reveal divergent views and elect their representatives at local meetings must share the responsibility for the creation of this fool's paradise. We might have respected them more if they had forever held their peace instead of breaking silence with their "Yeses" at the plebiscite. All cries and pleadings for unity were unavailing because the rallying point was not a natural focus derived and synthesized from the lowest common denominators. In a regime where policy can be carried through as well as formulated by a well-supported central junta the B.M.A. might have effected nothing less than a *coup d'état*. But whatever may be said for the broad front on which the B.M.A. has stood, it could never have been effective in a democratic regime until it had, so to speak, "gone to the country"—this especially when it had to represent a large number of constituents whose own initiative would take them no further in opposition than writing the single "Yes" at the ballot. However, that single "Yes" multiplied carries with it more power than any wholehearted resolutions passed unanimously in higher quarters. It can also be the last word when it comes to voting whether the profession is going into this new Medical Service.

This cannot make pleasant reading to many who have hitherto just looked upward instead of around them; but unless we recognize our weakness we cannot find our strength. Most people can now discern that our true rallying point is round the banner of our freedom. We need not lose that with such rights as the buying and selling of practices. But whatever we lose, if we forgo our own control and administration little else can be retained in the long run. It may be too late, but still the only practical course is to go back to the rank and file of the profession and later to the man in the street. A referendum will undoubtedly uncover the real state of affairs in relation to much of our pseudo-united front, but it should also reveal the fundamental basis on which we can unite. We cannot avoid a final showdown, and a little anticipation should enable us to formulate some positive amendment of the present Act. If the B.M.A. could not accept the result of the recent plebiscite as a mandate to negotiate with Mr. Bevan, are we at present in a position to show Mr. Bevan any valid democratic reason for believing that he has a mandate to tinker with an Act of Parliament that has just passed through both Houses of Parliament? Certainly not. But such a mandate might even yet be forthcoming if we enlisted our democratic power and abandoned methods unsuited to the manner in which all institutions are set up and maintained in this country.—I am, etc.,

Eye, Suffolk. J. SHACKLETON BAILEY.

*** This letter was written before the meeting of the Representative Body on Jan. 28.—ED., *B.M.J.*

An Eighty-four-hour Week

SIR,—There is one clause in the Act to which general practitioners should take great exception, and that is the one wherein it is stated they will be responsible for all patients at all times. It is generally agreed that there will be a great increase of work, particularly with infants and old people. It is neither in the interests of the patients nor the doctors for the latter to be on duty 168 hours per week, and, further, if a doctor contracts to be so responsible he will be unable to fulfil his contract. Who will take his calls when he is out? Domestic servants are scarce and will get scarcer as the years go by. The wives of doctors have enough to do already with their ordinary household duties.

I therefore suggest an 84-hour week. The G.P. will be on duty 7 a.m. to 7 p.m. every day of the week, and a night service could be run in each district. With London in mind, doctors who could do night duty only could be stationed at the local town hall or any similar convenient building, and would receive urgent calls between the hours of 7 p.m. and 7 a.m. I reckon that two doctors and two cars could manage for every 100 doctors in the area. The telephone number could be made popular—say 111 for all districts, like 999, except that each district would have its code letters in front of the number. The doctors doing night duty would be young doctors who had done a six-months house job and would then do six months' night duty. The benefit to the general practitioner of twelve hours undisturbed cannot be overstressed.

Finally we have the Press and public against us—Conservative, Liberal, and Labour—because people have not the imagination to picture a G.P.'s life; but when those people, mostly working 40–48 hours per week, read a headline that doctors are demanding an 84-hour week they will appreciate our position and be with us. I have tried this suggestion on several of my patients and have been very gratified at their reactions.—I am, etc.,

London, S.W.6. G. ROSEMONT.

Food Utensil Bacteriology

SIR,—I was most interested in the article on "Food Utensil Bacteriology" by Dr. Irene Hutchinson (Jan. 25, p. 134), as I have felt for a long time that British hygiene standards are very poor. It would be most enlightening to have similar statistics of other countries—say, America, Canada, and the Scandinavian countries—as a comparison. Surely the public health authorities could do something about the sanitary

arrangements of all feeding places? Why wait for outbreaks of "diarrhoea," etc., before taking action?

I note that Dr. Hutchinson refers to the fact that "no washing facilities were available either within or immediately adjacent to the sanitary convenience . . ." Surely a wash-bowl is essential *in any* sanitary convenience. In many private houses there even seems to be a social snobbery to have a w.c. and a separate bathroom and wash-bowl. I would maintain a wash-bowl essential in a lavatory—separate bathroom if you like. An architect recently discussed a house plan with me in which there was to be a downstairs lavatory and bowl, and even he said, "A bowl downstairs would be regarded as unnecessary, as there was ample accommodation upstairs." What can we do when even our architects feel like that?

As for the lack of soaps, soda, and washing cloths, etc., it would seem false economy and the usual incoordination between bureaucratic departments, public health, and Board of Trade or Supply. A further plea on a different line—fuel. Every house has at least one fire inefficiently heating one room, whereas with well-designed central-heating that one fire burning even poor quality fuel would heat the whole house. An American lady recently said to me she was always constipated in England as our bathrooms and lavatories were so cold that she could not bear to stay in long enough. Is any further comment necessary?—I am, etc.,

Tintagel, Cornwall. W. LAWSON.

Measles and Reconstituted Dried Plasma

SIR,—In view of the present epidemic of measles the following case may be of interest to your readers. Four cases of measles were reported on the children's ward of this hospital early in January, and although efforts were made to obtain immunizing serum, these were unsuccessful. It was decided to use reconstituted dried plasma as a method of producing immunity among the remaining children who had not had measles.

Master A., aged 5 years, received 10 ml. of double strength reconstituted plasma intravenously one day after exposure to infection. On the tenth day after exposure he had a temperature of 99° F. (37.2° C.), but was otherwise quite well. Two days after this a Koplik spot was observed, and he had a few maculopapules, typical of measles, developing fourteen days after exposure. The temperature rose at its highest to 99.6° F. (37.5° C.). There was no conjunctivitis, cough, or vomiting, and the child scarcely felt unwell. An uninterrupted recovery was made.—I am, etc.,

London, W.13. R. P. ARONSON.

Haemoglobin Concentration in Lobar Pneumonia

SIR,—The article on the "Changes in Haemoglobin Concentration in the Acute Stage of Lobar Pneumonia" (Jan. 25, p. 131), in which Dr. Margaret S. Ferguson states that there is no evidence of haemoconcentration in lobar pneumonia, recalls a similar observation made from a different aspect. A few years ago, when in hospital, we were presented with a case which was either an early lobar pneumonia or an acute abdomen. The haemoglobin was taken and found to be normal. This one would expect to be raised in an acute abdomen and we therefore concluded that we were dealing with pneumonia. The progress of the disease confirmed this diagnosis.

For the next six months the haemoglobin was taken in all cases of lobar pneumonia admitted, and each time was found to be approximately normal. The differential diagnosis of an early pneumonia and an acute abdomen can at times be very puzzling, and it is suggested that the simple measure of taking a haemoglobin might be of great assistance.—I am, etc.,

Bradford, Yorks. R. P. MATTOCK.

Endocrines in Gynaecology

SIR,—The brilliant researches which have led to the isolation of the ovarian hormones and the means of accurately assessing their action are in danger of bringing clinical endocrinology too much into the foreground at the expense of the equally (if not more) important nervous mechanism of control of sexual physiology. So long as conditions are normal Nature leaves the routine working of the systems which have hormone control to that chemical mechanism. When conditions are abnormal this is far from being the case. In times of great anxiety and stress the nervous controlling mechanism takes precedence over the more slowly acting chemical one, and this action can be instantaneous. Conditions of total war afforded many examples. Frequently the sudden fright of aerial bombardment did cause the menstrual process actually in evidence to cease instantaneously; the nervous tension and anxiety attaching to expected raids did induce the most profound metropathia—to mention the most obvious examples. No gynaecologist would think of attributing these dramatic happenings to abnormal hormone action nor of treating them with hormones.

In civil life the stimuli which affect the autonomic system are less dramatic than those of total warfare and their form is different; they are none the less real, and their action is comparable. Those who declare that endocrine therapy is unsatisfactory in the management of the metropathias and the secondary amenorrhoeas should indicate what proportion of their cases are being subjected to this line out of the total number of cases seen. Without this information it is difficult to assess the real value of treatment given.—I am, etc.,

Stanmore, Middlesex. EVERARD WILLIAMS.

SIR,—The leader writer (Jan. 18, p. 96) and Mr. Aleck Bourne (p. 79) seem to misunderstand the nature of the disease entity metropathia haemorrhagica. This has been isolated from the mix-up of functional bleeding and can be successfully treated by rhythmic substitution therapy with progesterone. The size of the dose and the fact that it may require to be continued for years are irrelevant to the principle of treatment, which is familiar enough in myxoedema and diabetes mellitus.—I am, etc.,

London, W.1. DONALD FRASER

Gynaecomastia

SIR,—I am surprised to see the recommendation in the annotation under the above heading (Jan. 25, p. 144) that a surgical removal of the breast tissue should be undertaken in cases of gynaecomastia. During the course of a somewhat long surgical career I have come across many cases of this troublesome little disorder, generally in males but occasionally in females, occurring before the true development of adolescence. In every case the condition has settled down after a few months, and a few words of explanation and encouragement are sufficient to allay any worry or anxiety on the part of the patient. I have likewise come across several cases where the small but very mutilating operation of excision has been performed on males and even more unfortunately on females. The operation is wholly unnecessary, and should never be undertaken.—I am, etc.,

York. GERALD S. HUGHES.

SIR,—In the annotation on gynaecomastia (Jan. 25, p. 144) no reference is made to what is perhaps the commonest cause of this condition—leprosy. In the lepromatous or more severe type of leprosy gynaecomastia is a comparatively common complication, and the breasts, which are generally both enlarged, may reach considerable size. The cause is supposed to be associated with the destruction of the testicles—a not uncommon occurrence in leprosy. In the most striking case I have seen, in which both breasts were larger than those of a pregnant multipara and were very painful and congested, the administration of thyroid extract gave rapid and complete relief, the breasts shrinking to about one-third the size in a few days.—I am, etc.,

London, S.W.1. E. MUIR.

Curare

SIR,—With reference to Dr. Massey Dawkins's letter (Jan. 18, p. 111), in which he states that curare has three disadvantages in the opinion of the nursing profession—namely, patients are more shocked, there is more respiratory depression for a long period, and there is a risk of post-operative paralytic ileus—I beg to disagree. In my experience patients are less shocked when using curare and first-plane or second-plane cyclopropane

anaesthesia. It has also been the experience of all our ward sisters that patients come round more rapidly and are brighter and thus give rise to far less anxiety to the nursing staff, who welcome the administration of curare for this very reason. As a matter of interest I should like to quote from an article which appeared in *Current Researches in Anaesthesia and Analgesia*, March–April, 1946, by Harold R. Griffith, who has used curare since 1942: "A judicious use of curare does not seem to increase the hazard of a patient in shock or suffering from haemorrhage; in fact it seems safer to obtain relaxation in this way than to use a toxic anaesthetic agent."

I do not doubt that curare can cause marked respiratory depression. We even know that it can cause respiratory arrest. The point, however, is that this state occurs five minutes after intravenous injection of curare and that even with complete respiratory arrest automatic breathing is resumed within eight minutes. In my own series of over 100 cases I have seen complete respiratory arrest in 5, and each time automatic breathing was resumed in less than five minutes. Controlled breathing was of course performed, and there were no after-effects in any of these patients. It is therefore obvious that there will be no sign of respiratory depression by the time the patient reaches the ward—usually half an hour or more after the curare has been administered. By that time, of course, the patient has resumed normal breathing; and furthermore curare is eliminated by the liver and the kidneys within thirty minutes.

The third point in Dr. Massey Dawkins's letter is the occurrence of paralytic ileus. Now, I have personally seen a patient suffering from this condition which came on four days after my anaesthetic of "pentothal," cyclopropane, and curare for an abdominal operation. The question of curare being the cause was raised at the time, as is perhaps natural with any fairly new drug. Personally I can see no connexion, nor can I find any mention of this complication in the extensive literature on curare. It is also difficult to see how curare, which is excreted within thirty minutes or so, can possibly cause paralytic ileus four days after the anaesthetic. The only peripheral action of curare apart from its effect on skeletal muscles is a block of the synaptic transmission between preganglionic and postganglionic fibres of the sympathetic nervous system. This would mean constriction of the intestine and active peristalsis, which are certainly not consistent with paralytic ileus.—I am, etc.,

Chiddingfold, Surrey. H. KAHLENBERG.

Histology of the Common Cold: An Appeal

SIR,—Apart from the work of Hilding (*Arch. Otolaryng.*, Chicago, 1930, **12**, 133) we have found no references to careful studies of the histological changes produced in man by the common cold virus. Further information about such changes would be of great value in the studies of this disease now being conducted here. Many people are killed in accidents or die acutely from other causes; many people have common colds, especially at this time of year: there must therefore be many who die acutely in the early stages of a cold.

We should be very grateful to any pathologist who could let us have small pieces of nasal mucous membrane from cases of accidental or other acute death where it was known that the subject was in the first week of a cold. Material should be placed in saturated corrosive sublimate solution containing 10% of formalin (40% formaldehyde), and sent to this address. One of us would also be glad to attend personally a necropsy on such a subject, should it be taking place in the London area.—We are, etc.,

National Institute for Medical Research, Hampstead, London, N.W.3. C. H. ANDREWES. J. S. F. NIVEN.

Applications for Special Diets

SIR,—In the debate on "Applications for Special Diets," reported in the *Journal* of Feb. 1 (p. 204), Mr. Strachey declared that the Advisory Committee named by him acted as a "court of appeal" to which all disputed cases were individually referred. He thought that its meetings were held weekly and as business required, and gave an assurance that the average time taken by the committee to decide appeals was nine days.

In an answer a week later (*Hansard*, Jan. 29) he said the committee had met twice in the last six months and full meetings are held only when revisions of the schedule are called for. Applications in disputed cases are *not* dealt with by the committee as a whole but by the secretary, who sends them to the members he thinks most suitable to deal with the particular case. The impressive "court of appeal" is thus whittled down to the exercise of the discretion of the secretary, and it is on this authority that the Minister overrules from Whitehall the treatment prescribed by doctors in actual charge of the patients concerned.—I am, etc.,

House of Commons. E. GRAHAM-LITTLE.

The Food Ration

SIR,—With the issue to the fore of the overruling of doctors' recommendations of rationed foods to patients, is it not also more than time that we made our professional voices heard regarding the inadequate rations of good protein and fat? We need no longer be deceived by official statements of world food shortages or by misleading statistics of the quantities of food we consume. Ministers themselves more than hint that rationing is now continued mainly for financial reasons; as such it is the implementation of a policy of suppression and bureaucratic control. Can we honestly deny that physical and mental health would be improved by more liberal allowances of milk, cream, butter, cheese, eggs, and fresh meat, and can we reasonably escape the conclusion that the continuation of this low and monotonous level of subsistence, accepted inevitably and even cheerfully during wartime, is contributing in no small measure to the chronic ill-health, frustration, and idleness so prevalent to-day?

Patients themselves are aware of this and appeal to the doctor for his verdict on the adequacy of their diet. I submit, Sir, that we should not hesitate to express our considered opinion to patients on this matter, also pointing out, in those cases where we would wish to augment diet to assist recovery, exactly how and where our hands are tied. Our critical opinion, voiced persistently by as many of us who are agreed on this matter, in which the public is so profoundly interested, must surely hasten the loosening of at least this crippling stranglehold on our liberty.—I am, etc.,

Kingston Hill, Surrey. KENNETH O. A. VICKERY.

WAR OFFICE DEMAND FOR JUNIOR OPHTHALMOLOGISTS

The Central Medical War Committee is informed that, because of the shortage of ophthalmologists available for military service, the War Office is prepared to employ as trainee ophthalmologists, with a view to early grading as graded specialists, a number of men who, although not at present of graded specialist status, have held resident appointments for not less than six months in ophthalmic hospitals or ophthalmic departments of general hospitals in the United Kingdom, and are recommended by the ophthalmologists under whom they have worked as being competent to deal with errors of refraction, to perform minor operations of the eye, and to treat the common diseases of the eye. A large part of the ophthalmic work in the Army falls under these headings, and if men with the limited experience referred to were available to deal with such work, the cases requiring the attention of a fully trained ophthalmic specialist could be concentrated at special centres in the home and overseas commands; greater economy in the use of the specialist officers would thus be effected.

The Central Medical War Committee is now considering the recruitment of young practitioners whose experience in ophthalmology is such as to satisfy the Army's requirements as stated above. It invites applications from practitioners who will shortly complete junior resident appointments in eye hospitals or eye departments and who would like to undertake their military service at this stage as trainee ophthalmologists. Communications should be addressed to the Secretary of the Committee, B.M.A. House, Tavistock Square, London, W.C.1.

Obituary

BERNARD T. ZWAR, C.M.G., M.D., M.S., F.R.A.C.S.

Mr. Bernard T. Zwar died at his home in Malvern, Victoria, on Jan. 16 at the age of 70. Bernard Zwar was born in Adelaide on June 20, 1876, and was educated at Prince Alfred College. He began his medical course in the University of Adelaide, but owing to difficulties at the hospital there about 1897 the students migrated to other universities. Melbourne benefited by the acquisition of Bernard Zwar and Julian Smith, and Sydney by that of Charles Blackburn. These three men were to attain eminence in their chosen professions—Bernard Zwar and Julian Smith as surgeons and Charles Blackburn as a physician.

When he graduated in 1900 Zwar became senior resident surgeon at the Melbourne Hospital, later to become the Royal Melbourne Hospital. He was then, for three years, medical superintendent at the Austin Hospital, where many of the patients were suffering from advanced tuberculosis and malignant disease. He proceeded M.D. in 1902, and took the M.S. in 1908, the year in which he was appointed honorary surgeon at St. Vincent's Hospital, remaining on the staff there until 1911. In 1912 he was appointed honorary surgeon in charge of out-patients at the Melbourne Hospital, where he had been a student and with which he was to be intimately associated for the rest of his life. He remained on the honorary staff of the hospital until 1935, when he was appointed consultant surgeon. In 1937 he became president of the Board of Managers of the Royal Melbourne Hospital and chairman of the Board of the Walter and Eliza Hall Institute.

Zwar served in the Great War of 1914–18 with the rank of major, A.A.M.C., as a surgeon in the 2nd Australian Stationary Hospital, and later in the 2nd Australian General Hospital. In 1916 he married Miss Essy Craig and so began the very successful partnership which ended only with his death. Their only son, John, has adopted surgery as his chosen profession and served in the recent war. Zwar was also very closely associated with the University of Melbourne. He was Stewart Lecturer in Surgery from 1924–35, and thereafter became a member of the council of the university, and ultimately Deputy Chancellor in 1943. He was for a long time a member of the Medical Board of Victoria, and he took an active part in the formation of the Royal Australasian College of Surgeons, becoming a Foundation Fellow in 1927. In 1929 he was president of the Victoria Branch of the British Medical Association. At the Fourth and at the Fifth Australasian Medical Congresses he was vice-president of the section of surgery.

Dr. C. H. Kellaway writes: My friendship with Zwar dates back to 1912 when I was a resident, and later registrar, at the Melbourne Hospital. Zwar was associated with Mr. Moore in private practice and had just become an honorary out-patient surgeon at the hospital. During the time I was in residence he did a great deal of the emergency surgery there. He was a fine surgeon with a first-class knowledge of anatomy, and his aseptic technique, in the days when there were some surgeons who had occasional lapses, was beyond reproach. In surgery requiring dissection he was especially skilful. This art he had learnt from Mr. Moore—known to us all as Jerry, just as Zwar was always known to and addressed by his intimates as "Z." He was a splendid teacher and was very good to his young house-surgeons, whom he would take out to play tennis or to the country in his car at the week-ends.

As a member of the University Council Zwar brought his accurate knowledge of past events, his clear and unbiased judgment, and his skill in debate fully into play. As president of the hospital he was also chairman of the Board of the Walter and Eliza Hall Institute, and contributed much to developing the Institute and securing its closest possible relationship to the university. His efforts in this direction resulted in the Director of the Institute becoming professor of epidemiology in the university with a university research department within the Institute.

One of the most impressive things about Zwar was his accurate and detailed knowledge of the local history of the profession, of his own hospital, of the medical school, and of the university. Among his many activities the work that Zwar did for the Royal Melbourne Hospital stands pre-eminent, for he devoted many years of his life to getting the hospital moved from its cramped quarters in the city in Lonsdale Street to the spacious new site in Sydney Road, adjacent to the university. This project had many vicissitudes and much opposition and without Zwar's energetic championship it is doubtful whether it would ever have been achieved. Through his personal effort and the enthusiasm he inspired in others he was instrumental in raising a considerable part of the money needed. Much of his time in the last years of his life was spent in hospital and university affairs. As president of the Board of Management of the hospital he saw the new buildings go up, the main buildings being finished in time to house the 4th U.S. General Hospital in April, 1942. Finally, towards the end of the war and after many delays, Zwar had the crowning satisfaction of seeing completed the removal of the staff and patients from the old hospital to the new. For his work for the Royal Melbourne Hospital and for the community Zwar was appointed C.M.G. in 1941.

It was not surprising that Zwar had many friends. He always enjoyed a joke, even a practical one upon occasions. His robust optimism and unfailing cheerfulness had a stimulating influence on patients and friends alike. He was always full of energy and threw himself with characteristic vigour into his outdoor hobbies, walking, golf, and gardening, and, even when over 60, he still played a skilful game of tennis in good company. Although he was a sick man for many months before his death, knowing full well the outcome, he continued to write to his friends cheerful letters full of interest in their doings and with never a reference to his own illness. Zwar would have been a leader in any profession or in any circle by reason of his personality, his ability, his forthright honesty and sincerity, and his determination to be satisfied with nothing less than the best.

Dr. FRANCIS ROBERT BRYANT BISSHOPP died on Dec. 26 at the age of 87, at Tunbridge Wells Hospital after an operation. Dr. Bisshopp took the Cambridge M.A. in 1887, and after a year at Guy's Hospital qualified M.B., B.Ch. He proceeded M.D. in 1892, and was awarded the M.R.C.P. in 1901. Dr. Bisshopp had been in retirement for some years. He was latterly consultant physician and had been senior physician at the Tunbridge Wells Counties and General Hospital. He was also consulting physician to the Tonbridge Infirmary. A Fellow of the Royal Society of Medicine and of the Medical Society of London, he had been president of the Kent Branch of the British Medical Association in 1927–8. Dr. Bisshopp was a resident at Guy's Hospital after qualifying and held successively the posts of resident physician, house-surgeon, and resident obstetric physician. He was a quiet and reserved man, but he always continued his association with a few of his earlier contemporaries.

Dr. ROBERT VACHELL DE ACTON REDWOOD died on Jan. 3 at Crickhowell, Breconshire, at the age of 67. He was born into a Unitarian home at Rhymney, and ultimately became chief surgeon to the Rhymney Medical Aid Society, a position which his father and grandfather had held previously as surgeons to the iron and steel works before they were closed down in 1899. The three succeeding generations had held the post of chief surgeon at Rhymney for a period of 142 years, but the family succession to the practice is now broken. Dr. Redwood married a Yorkshire lady, a Miss North, who survives him. He was trained at the Welsh National School of Medicine at Cardiff and at St. Mary's Hospital, and after taking the conjoint diploma in 1903 he went to Edinburgh, where he obtained the Fellowship of the Royal College of Surgeons. He had intended practising as a consultant surgeon in ear, nose, and throat work, but settled finally in Monmouthshire, practising as a general surgeon. He was also medical officer of health to the Rhymney Urban District Council, and district medical officer under the Monmouthshire Social Welfare Committee. He was a good sportsman, an accurate shot, and a fine cricketer, having played for Monmouthshire in the Minor Counties' Tourney, but of recent years he had to take things easily owing to cardiac trouble. The inhabitants of Rhymney and its neighbourhood have lost a greatly respected friend, and one whose memory will be cherished for years to come, for he was gifted with that personal charm and grace of manner which give the balance to life and to the happy relationship between doctor and patient.

He had been a member of the British Medical Association for over forty years, surgeon to the Rhymney hospital for even longer, and he was also the St. John's Ambulance divisional surgeon for Monmouthshire.

Dr. ALFRED HAYES SMITH died at a Bradford nursing home on Jan. 6 at the age of 63. Dr. Smith qualified M.B., B.Ch., B.A.O. in 1908, and he returned to Dublin to take an M.D. in 1939. He served as a captain in the R.A.M.C. in the 1914–18 war, and apart from this interruption most of his professional life was spent in Bradford. He was honorary physician to the Bradford Children's Hospital, and had been honorary secretary of the Section of Diseases of Children at the annual meeting of the British Medical Association in 1924. He had published a number of papers on acquired anaemia in childhood, acute aplastic anaemia, and hereditary telangiectasia. He was a staunch supporter of the Conservative Party and of the Society of Individualists, helping to found the Bradford branch of that society in 1944. Perhaps his last published address was given on behalf of the Society of Individualists and the National League for Freedom to a meeting of the Cleckheaton Rotary Club. Dr. Smith put forward a vigorous defence of the moral and spiritual quality of a free medical profession as against any form of State medicine. He was a confirmed opponent of the "closed shop" and of the present National Health Service Act.

Dr. W. Sampson Handley writes: Dr. Hayes Smith had been a friend of mine for many years. He was a passionate idealist and an individualist. After the death in action in North Africa of his only son, a schoolboy when the war broke out, Hayes Smith found solace for his grief in a determined campaign to enlist public opinion in favour of medical freedom and in opposition to the shackles of State medicine. On Dec. 16 last he was assisting at an operation when the patient stopped breathing. Hayes Smith continued artificial respiration unceasingly for three hours until the patient revived. The exertion was too much for him. Subsequently he suffered from increasing precordial pain and an electrocardiogram on Dec. 21 indicated coronary thrombosis. After a temporary improvement under treatment he died in his sleep on Jan. 6. His life, and his death too, illustrated the selfless devotion to the interests of his patients which characterized the man.

Dr. ALEXANDER ROSE, of South Norwood, London, died in Edinburgh on Jan. 12. Born in Scotland, he qualified M.B., C.M. at Aberdeen in 1889 and took his M.D. in 1906. He started in general practice in South Norwood in 1891, after acting as registrar at the Central London Throat and Ear Hospital. For nearly fifty-five years he conducted a large practice with amazing energy. In 1939 he had intended retiring, but decided to play his part in the war effort. His two partners were called up for service with the armed Forces, and so the latter years of practice put a heavy strain on a man of his years. In 1914–18 Dr. Rose worked at the emergency hospital at the Davidson Road Schools. During the recent war he was one of the first local doctors to be attached to the A.R.P. organization in South Norwood. His charming personality and fund of Scottish humour combined with his high standard of professional skill to bring him a wide circle of friends, who held him in high esteem and affection. As a relaxation from his work his interests lay in B.M.A. work, bridge, and chess. He joined the British Medical Association in 1910 and was a member of the executive committee for many years and chairman of the Division 1929–30. A keen bridge player, he entered many competitions and was a member and president of more than one chess club. He showed the same skill in his hobbies as he did in his work. His sudden death occurred while he was playing chess for Edinburgh.

Dr. CHARLES FRANCIS PURCELL PLUNKETT died suddenly in his surgery on Jan. 14 at the age of 69. Dr. Plunkett had not been well for a few days and had been busy. He had just completed his evening surgery when he was taken ill and died shortly afterwards. Born in Ireland, Dr. Plunkett took the L.R.C.P.I. and L.M., L.R.C.S.I. and L.M. in 1903. Soon afterwards he came over to this country, and he saw service in Salonika during the 1914–18 war. After his demobilization he practised for some years in the Harehills and Beckett Street district of Leeds. His brother-in-law, Dr. A. J. Swanton, is still Leeds City Coroner. Later, however, Dr. Plunkett set up in practice at Mitcham Road, Tooting, London, and there he was actively engaged in a busy general practice right up to the time of his death. He did particularly valuable work during the recent war and continued to look after his many patients although he had to evacuate his house, which was damaged, and on another occasion he was himself injured in an air raid. Dr. Plunkett was one of the most popular general practitioners in Tooting, and the sympathy of all who knew him will go out to his widow, his two sons, and a daughter.

Dr. ERNEST GEORGE SYMES SAUNDERS died on Jan. 16 at his home in Devonport. He qualified M.B., C.M. at Aberdeen in 1891 and proceeded M.D. in 1893. Not long after qualifying Dr. Saunders, who was born at Exminster, started practising at Devonport, and he was on the staff of the Prince of Wales Hospital there for forty-three years. He was consulting surgeon to the hospital at the time of his death, and for twenty years he had been honorary surgeon to the Torr Home for the Blind. In recent years he had not been so actively engaged in practice as formerly, but he never completely retired. Dr. Saunders inherited his love of art from his grandfather, Emanuel Jeffery, a freeman of Exeter and a contemporary of Turner. He was one of the original members of the Plymouth Arts Club and of the Plymouth Society of Artists. His chief interest outside his work, however, was in archaeology. He was the oldest member of the parent society and had been for many years chairman of the local branch of the Devonshire Association. He spent many of his leisure hours searching the Blockhouse, Brickfields, and Roborough for flint implements and other archaeological relics.

The death of Mr. HERBERT JOHN GREEN at the early age of 40 has cut short what appeared to be a career of great promise. Mr. Green was born at Boyndie in Banffshire, where his father was a successful farmer, and he was educated at Banff Academy. From there he passed to the University of Aberdeen and graduated M.B., Ch.B. in 1930. He was resident house-surgeon to the Aberdeen Royal Infirmary, and afterwards to the Royal National Orthopaedic Hospital, London. In 1932 he settled in practice in Banff, and was early appointed to the staff of the Chalmers Hospital. Here he carried out much surgical work of high quality, and in 1937 he obtained the F.R.C.S.Ed. Becoming interested in obstetrics and gynaecology, he gave up his practice when he was appointed to the Jessop Hospital for Women, Sheffield, in 1938. Here he worked hard and successfully, and in the following year was made registrar to the hospital and tutor in the department of obstetrics and gynaecology of Sheffield University. He obtained the M.R.C.O.G. in 1940. On the outbreak of war in 1939 Mr. Green was called on service as medical officer to the Banffshire R.A. Territorial Unit. He served throughout the war, at one time holding administrative staff appointments, but for the greater part of service he held surgical appointments in India and Ceylon. He attained the rank of lieut.-colonel. Just over a year ago Mr. Green was demobilized and took up again his appointment in Sheffield, where his interest in obstetrical and gynaecological work continued unabated. It seemed likely that he would worthily uphold the reputation of the Jessop Hospital in the future, but this was not to be Mr. Green was tall, and had a genial disposition which brought him many friends both in Banff and Sheffield. He was held in high esteem by the board and the staff of the Jessop Hospital, and was popular among the students, who profited by his teaching. He was a careful and conscientious surgeon. He is survived by his wife and two sons.

The Services

Capt. (Temp. Major) N. C. Welply, R.A.M.C., has been appointed M.B.E. (Military Division) in recognition of gallant conduct in carrying out hazardous work in a very brave manner.

Brig. F. R. Sandford, C.B.E., M.C., T.D., has been appointed Honorary Colonel, 43 (Wessex) Division, R.A.M.C., Territorial Army, in succession to Col. G. L. Thornton, C.B.E., M.C., T.D., whose tenure of appointment has expired.

The following decorations have been conferred by the President of the U.S.A. in recognition of distinguished services in the cause of the Allies:

Legion of Merit, Degree of Commander.—Major-Gen. Sir A. G. Biggam, K.B.E., C.B., K.H.P., Major-Gen. (local) D. C. Monro, C.B.E., C.B., K.H.S., late R.A.M.C.

Legion of Merit, Degree of Officer.—Brig. (local) E. R. Boland, C.B.E., R.A.M.C.

Bronze Star Medal.—Brig. (local) Sir Stewart Duke-Elder, K.C.V.O., Major (Temp.) P. M. Turquet, R.A.M.C.

The following appointments and mentions in dispatches have been announced in recognition of gallant and distinguished services in the field:

M.B.E.—(Military Division).—Major T. McLardy, R.A.M.C.; Capts. R. S. Seagat and S. Ahmed, I.A.M.C.

Mentioned in Dispatches.—Major G. O. Gauld, and Capts. D. Benson, S. Campbell, D. R. MacPherson, L. D. Stone, and W. J. Street, R.A.M.C.; Capt. C. S. Singh, Sub. D. M. Khan, and Jem. W. M. Khan, I.A.M.C.

Medical Notes in Parliament

SCOTTISH HEALTH SERVICE BILL

The Standing Committee on Scottish Bills, Mr. MATHERS in the chair, began consideration of the National Health Service (Scotland) Bill on Jan. 28. The Committee agreed to sit on Tuesdays and Thursdays of each week.

On the motion that Clause 1 should stand part of the Bill Col. WALTER ELLIOT said the Clause, which recapitulated the general purposes of the Bill, had secured the approval of a majority of the House of Commons and therefore the Conservative Opposition could not criticize it. Nevertheless, there were questions of emphasis which the Opposition thought it worth while to raise. The Clause defined the object of the Bill to be:

"The establishment in Scotland of a comprehensive health service designed to secure improvement in the physical and mental health of the people of Scotland and the prevention, diagnosis, and treatment of illness, and for that purpose to provide or secure the effective provision of services in accordance with the following provisions of this Act."

Col. Elliot said the Opposition view was that in the past the people of Scotland had themselves done a great deal to secure the provision of effective health services. The concentration which this Bill sought to centre on the Secretary of State for Scotland might slow up the securing of effective health services throughout the whole of Scotland. Therefore the Opposition would seek to lay emphasis on securing in the Bill provisions which would divert its methods from actual provision of services by the Secretary of State himself and from the danger of over-centralization.

Mr. THORNTON-KEMSLEY said subsection 2 of Clause 1 stated that the services should be provided free of charge. This was true in the sense that such services would not be followed by an account. In every other sense they would be far from free. Parliament would provide a very expensive service which would have to be paid for by the taxpayer, the ratepayer, and those who paid National Health Insurance contributions. If the service was to be free of charge for all, then so far as he could see any foreign subject staying in this country who required medical attention or treatment of any kind would be eligible to have that service free. He was not sure that this ought to be provided. He suggested that on the Report stage an amendment could be made to make it clear that the service should be free to British subjects resident in the United Kingdom.

Mr. STEPHEN drew attention to the provision in subsection 2 that the services provided should be free of charge except where any provision of this Act expressly provided for the making and recovery of charges. He noticed in the Bill a special reference to provision of dental treatment. He hoped the Minister would cut that out of the Bill and have one treatment for all people.

Mr. J. S. C. REID said the point raised by Mr. Thornton-Kemsley was important. He assumed that if someone was run over in the street the Secretary of State would take that person into a hospital and treat him whether he was alien or Scots. The second type of person was the one who became ill and required the services of a doctor. Could that person walk round to the nearest doctor on the list and say he needed attention? Did he have to find out whether he was on a list somewhere else in Scotland or England? If so, what happened to him meanwhile? Was any member of the community who happened to be sick while away from home entitled to walk round to the nearest doctor on the list, and was that doctor bound to attend to him? If the doctor was not bound to attend to a person on holiday or an alien this service was not comprehensive. Was an alien or a British subject not resident in Scotland entitled to get the services in the Bill which were not so urgent, such as the provision of spectacles?

Paying for the Service

Mr. WESTWOOD said he would take all such points into consideration when dealing with the Regulations and the administration. It had been made perfectly clear on Second Reading that somebody had to pay, but so far as calling in the doctor was concerned and getting the service which the Clause sought to provide, that would be free to the individual who required the service. The payment would be met as in respect of less than 5% of the cost from local rates, nearly 20% from the National Insurance contribution, and the rest directly from the Exchequer. As for providing treatment to those temporarily in the country, the Government would have to see that treatment to those who required it was given. There would have to be regulations to safeguard the services of the doctors who gave such attention. Experience under the National Health Insurance Scheme of to-day could be turned to good service in dealing with the problems of a comprehensive health service. The word "comprehensive" meant taking in everything.

Col. ELLIOT said he had a troublesome case in mind of an alien temporarily resident in this country who was suffering from a dangerous and infectious disease and, because he was an alien, had been refused treatment not in Scotland but in England, since the passage of the National Health Service Bill. His disease was leprosy. An active leper was walking about an English city because he was not allowed access to treatment. Col. Elliot thought that the provision of the Bill did not cover that case. Subsidiary legislation might be needed for such cases. The declaration of Mr. Westwood went a good deal further than a statement Col. Elliot had received from the Chief Medical Officer for England, which was that the policy in such cases was to repatriate the individual. That was an ill-advised suggestion for an active disease such as leprosy. In the present condition of Europe it was not always possible to repatriate.

Mr. SCOLLAN said the fact that a man with leprosy was walking about and that the present medical services could not deal with the case was the finest argument for a new medical service.

Dr. MORGAN said Col. Elliot had not been in active practice for some time. Had he been, he would have been aware that the infectivity of leprosy had been grossly exaggerated.

Col. ELLIOT replied that Dr. Adami had certified the infectivity of this case.

Clause 1 was then ordered to stand part of the Bill.

Health Services Council

On Clause 2 Mr. J. S. C. REID moved an amendment to provide that the Scottish Health Services Council, whose duty would be to advise the Secretary of State upon matters relating to services provided under the Act, should also be empowered to give advice respecting services which could be provided.

Mr. WESTWOOD said he was willing to accept the amendment for the purpose of giving him a more comprehensive health service. The Committee then agreed to the amendment. A similar amendment was made in respect of advice on health services provided by local health authorities.

Cmdr. GALBRAITH moved to omit from subsection 3 of Clause 2 words which provided that the Secretary of State should appoint Advisory Committees from persons who were members of the Health Services Council and other persons and should do this after consultation with that Council. Cmdr. Galbraith thought that the Secretary of State having appointed the Council should allow it to appoint its own members on the Standing Advisory Committees.

Mr. Westwood accepted the amendment.

Mr. WATSON asked for an explanation of what was meant by "Advisory Councils" and "Advisory Committees" who were to advise the Secretary of State. He pointed out that the Secretary of State could disregard such advice and take his own line.

Mr. WILLIS said it seemed dangerous for the Secretary of State to receive advice from a Health Services Council which in turn received advice from Committees appointed by itself.

Mr. WESTWOOD said that apart from the members appointed by the Health Services Council he would appoint all the other members on these Advisory Committees. Such appointments would be made only after consultation with the appropriate bodies. The amendment moved by Cmdr. Galbraith was then agreed to.

Power to Withhold Annual Reports

Col. ELLIOT moved to omit from Clause 2, subsection 5, the provision that the Secretary of State might after consultation with the Health Services Council withhold from Parliament the annual report from that Council or any part of that report if satisfied that publication would be contrary to the public interest. He said the same issue had already been discussed during the debates on the English Act. He thought the danger of unauthorized disclosure was covered by the Official Secrets Act and that so responsible a committee was unlikely to make disclosures against the public interest.

Mr. WESTWOOD said the requirement that the annual report must be published was contained in the Clause but was a rather unusual one. He must have the safeguard which was afforded him by the proviso. If there were some new drug for which fantastic claims were made it would be right that until that drug had been tested the Government should not publish a part of the report dealing with it. Again, the report might include a statement about the increasing incidence of certain diseases. The Department did not wish to create undue alarm, and it might be desirable in the public interest that the whole

of the report should not be made public. He resisted the amendment.

Mr. MACLAY thought that the Secretary of State would never act on his own decision or even on the advice of his permanent officials concerning the publication of a statement on a particular disease or a new drug. He asked him to be guided entirely in such a matter by the Health Services Council of medical experts.

Mr. WESTWOOD said that if he could do nothing except by agreement with the committee set up he would be divesting himself of executive responsibility.

Mr. SCOLLAN said those who drew up the report would not be foolish enough to include information alarming to the public. Even if they did, and it was kept out of the published report, a Member of Parliament could elicit the information by a Question to the Minister in the House.

Sir JOHN GRAHAM KERR said the ultimate responsibility for administration under the legislation rested with Parliament and it was wrong that any part of the report should be kept secret from Parliament. The proposal to omit the words which had been challenged was defeated by 33 to 16.

Standing Advisory Committees

On the motion that Clause 2 as amended stand part of the Bill Mr. MCLEAN WATSON said it appeared to him that in the Health Services Council some interests were over-represented and others were under-represented. He supposed that the representative organizations which the Secretary of State was to consult when appointing the Advisory Committees were organizations outside those already represented on the Council. Was the Minister satisfied that there was no possibility of a conflict between the Standing Advisory Committees and the Council itself?

Mr. WESTWOOD said he had in mind as Advisory Committees a medical, a nursing, a hospitals, a mental health, a dental, and a pharmaceutical committee, and so on. Their advice would be considered as and when it was given. On these bodies it would be possible to include members connected with sectional interests which at the moment might be excluded from the central committee. He also proposed to set up a Highlands and Islands Committee. A Standing Advisory Committee under Clause 2 could report direct to the Secretary of State with the provision that a copy of the report went to the main Council, which could make observations on it to the Secretary of State. There would be consultations with the associations of the local authorities, but in a State service there could not be direct representation from a local authority as such. There would be consultation with the national associations of local authorities in Scotland. In appointing an Advisory Committee on nursing he would consult the bodies which controlled nursing in Scotland. For a medical Advisory Committee he would have consultations with the representatives of the British Medical Association. He was prepared to see whether something further could be provided for safeguarding the rights of local authorities.

Clause 2 as amended was then ordered to stand part of the Bill.

Hospital and Special Services

On Clause 3 Mr. REID moved to amend the phrase "It shall be the duty of the Secretary of State to provide throughout Scotland" by substituting the words "secure the provision" for the word "provide." He said this Clause dealt with services necessary to meet all reasonable requirements in hospital accommodation, medical, nursing, and other services required at or for the purpose of hospitals, and the services of specialists whether at hospitals, health centres, or elsewhere. The manner in which these services were to be provided was by direct supervision of the Secretary of State. Yet Clause 2 provided alternative methods whereby the services under the Bill were to be provided either by the Secretary of State or by his securing effective provision of them. Would Mr. Westwood not leave other bodies to provide hospital services where they did this at present in a perfectly good manner or where they could do so. The phraseology came from the English Act, about which Mr. Bevan had declared that he could not be responsible for adequate provision of services unless he was directly responsible for every detail of those services. Mr. Reid was sure Mr Westwood would not try to repeat that argument. Why should local authorities who were carrying on a good hospital service be deprived of their hospitals simply to get a uniform regimentation of the hospitals of Scotland? Why should the great infirmaries which provided as good hospital services as any in or out of Britain be taken over by the Government? If the Secretary of State desired to provide additional beds himself nobody would seriously object, and he was setting up under this Bill Regional Boards which were appropriate bodies to see to the proper co-ordination of hospital services. Indeed, the Bill put too much on the Regional Boards and made it more difficult for them to carry out their primary function of co-ordinating the hospital services. That could be done at least as well if the Regional Boards did not have direct responsibility for the everyday administration of hospitals. He hoped Mr. Westwood would agree to alternative methods and that either he should provide or that others should provide these services.

Mr. WATSON said the local authorities had been pushed into the background even with regard to management of the hospitals. He agreed that all hospitals should be brought under a central control no matter how well they had been run in the past, but when it came to management he thought the local authorities should be given more say.

Mr. CARMICHAEL said it was not merely a case of taking away the administration of tuberculosis hospitals and of infectious diseases hospitals from the local authorities but of breaking the link with the medical officer of the area and with the people responsible for reporting infectious diseases. Parliament was denying the medical officer the right to keep contact right up to the hospital.

Mr. WESTWOOD said the Government deliberately avoided putting into Clause 3 the words "to secure the provision of hospital services" and he had not the slightest intention of being accommodating so far as this particular amendment was concerned. He could not accept the arguments in favour of local authorities continuing to provide the hospital services as they did now. Some were wealthy and had been able to do the job well, but they had to consider the effectiveness of the service that had to be provided for Scotland as a whole. The national responsibility for this service must rest with the Secretary of State and it must be a national hospital service. There must be neither local authority nor voluntary hospitals but a clear national responsibility for the hospital service. He advised his supporters to oppose the amendment.

Col. ELLIOT said the Opposition conceded the point made by Mr. Westwood that he must have the right to provide. They were willing to modify their amendment but they asked why the Committee should not use the words employed by Mr. Westwood on an earlier Clause—"to provide or secure the provision of."

The Committee then adjourned.

Services Secured and Provided

Consideration of the amendment to Clause 3 moved by Mr. J. S. C. Reid was resumed by the Committee on Jan. 30. Col. ELLIOT said that arguments had been advanced to show that the services should be secured as well as provided by the Secretary of State. The suggestion that a great improvement would take place in the health services if they were provided by one Minister was not borne out by practical experience, for example, of the pensions Ministers. For one complaint which any M.P. had during the twenty years between the wars about voluntary hospitals or about local authorities they had a hundred about the hospitals of the Ministry of Pensions. Provision of services by the alternative methods of the voluntary hospital and of the local authority hospital should not be scrapped without more justification than had been given. The Secretary of State, with his own hospitals, would be in a position to supplement deficiencies, to fill any gaps, and if necessary to act as a pacemaker to the hospital system which at present existed.

Mr. MACLEAN WATSON said Col. Elliot was trying to introduce prejudice into the debate because there was feeling about the Ministry of Pensions hospitals. As far as Mr. Watson knew the Ministry of Pensions hospitals did good work during the war and had done so since the end of the war. The Ministry of Pensions hospitals might carry on under that Ministry in the future as they had done in the past.

Mr. SOMERVILLE HASTINGS said it was common grounds that some power must tell each hospital what its function should be, decide what type of work it could do best, and not allow every hospital incomplete facilities to undertake every type of work. The Secretary of State could not control these hospitals merely by a monetary grant. Control could not be achieved without ownership. Some small voluntary hospitals which had been highly endowed had neither the staff nor the equipment to turn out the best work. The Secretary of State could now say to such a hospital, "In the new scheme your sphere is not to be a general hospital but a convalescent home."

Cmdr. GALBRAITH said the Committee was concentrating too much on hospitals and forgetting that the clause also dealt with medical, nursing, and other services.

Mr. BUCHANAN said the Ministry of Pensions hospitals taken on the whole compared more than favourably with most other hospitals. It was true that Members received some complaints, but if a person had a complaint about a voluntary hospital he

could write to no one because no public body had any responsibility. It was essential to the Bill that the Secretary of State should have the whole of the hospitals within his power and control.

Major LLOYD said the view expressed by the Opposition was that of the majority of the people of Scotland. The amendment proposed by Mr. Reid was rejected by 27 to 12.

Medical Education and Research Facilities

The chairman, Mr. MATHERS, then called an amendment by Mr. Reid to leave out subsection 2 of Clause 3. This subsection provides that it shall be the duty of the Secretary of State in furnishing hospital and specialist services to make available such facilities for undergraduate and postgraduate clinical teaching and research as he considers necessary to meet all reasonable requirements.

Mr. REID said this amendment covered narrower ground compared with others which would appear later suggesting that the teaching hospitals might receive rather different treatment from the ordinary hospitals. The Opposition thought that the Committee should accept, with regard to certain functions, the difference made in the English Act between the governors of a teaching hospital and the board of management of an ordinary hospital. He did not think that all the issues raised on the functions of the teaching hospitals could be covered in an omnibus discussion. There was the relationship of the teaching hospitals with the universities, the question whether the internal administration should be under the Regional Board, the position of the officers of the hospitals and whether they should be officers of the Royal Infirmary or of the South-Eastern Region, and a number of other questions. Every one of these questions was of great importance to Scotland. Mr. Reid then moved to leave out subsection 2. He said that if Scotland was to have a flourishing school of medicine, it must have intimate and friendly relations between the university and the hospital in which clinical teaching took place. These relations must be between equal partners and between people who were on the spot. In the past one of the elements leading to the success of the Scottish schools of medicine had been the friendly relationship between the royal infirmaries and the universities concerned. A similar basis had been maintained as far as possible under the English Act. But in Scotland the permanent officials sitting in St. Andrew's House would advise the Secretary of State on the clinical teaching facilities considered necessary to meet reasonable requirements. The Secretary of State and his permanent officials were not the right people to dictate to the universities of Scotland what clinical teaching facilities they ought to have. If the Bill went through in its present form he would view with apprehension the future of Scotland as a resort for foreign students of medicine. The Secretary of State had not direct responsibility for the teaching of students, but he had told the House that the present Scottish education system was bad and ought to be altered as soon as possible so as to centralize it. The Opposition thought the proper course was to decentralize this matter.

What the Opposition proposed was that the schemes which regional boards must make with regard to future organization of the hospital services should specify those hospitals which were to be concerned in the provision of facilities for teaching and research. It was not easy to say what was a teaching hospital. Therefore an improvement on the English scheme would be to let the regional board say which hospitals were to be chiefly engaged in teaching and which hospitals should only engage in teaching to a minor extent. The regional board knew the local circumstances and so could say which were to be the big teaching hospitals in Scotland in future. At present there were five large ones about which no one could have any doubt. Others were already used to a considerable extent for teaching and would probably come into this category. Others were only used to a minor extent and could be left out. This was a proper job for the regional board to undertake. One of the blots on the present scheme was that the new boards of management for the Royal Infirmaries in Edinburgh and Glasgow, the Western Infirmary, or the other big infirmaries had no direct contact with the universities. It was completely subject to the regional board. Under this Bill there was no difference in status between the board of management of a great royal infirmary and the board of management of two or three cottage hospitals in the country. Parliament would not secure the right people on the boards of the royal infirmaries if they were to be tied hand and foot.

Universities and Teaching Hospitals

Sir JOHN GRAHAM KERR said the interrelation of the university and teaching hospital was important to the welfare of the whole public health service. The two were inextricably entangled. He instanced the calling of one of his staff by a Colonial Government to go out and tackle an epidemic of dysentery. That man was a member of a particular university staff which the outsider would think had nothing to do with such a problem. It was in the medical school of a university or an extramural medical school that such work was done. The Committee should not forget that Scotland had some of the greatest extramural medical schools in the world, such as Anderson College in Glasgow. Research was done partly in the laboratory of the University or of the medical school and partly in the wards of the infirmaries. To ensure that these two were properly run there must be an intimate relationship between the governing bodies of the university or medical school and of the teaching hospital, or the result would be disaster. What would have happened to Lister when doing his research in the Royal Infirmary of Glasgow if that infirmary had been under the control of any Government official at a distant point? That great work would have been lost.

Mr. SCOLLAN pointed out that the Clause itself said that as far as practicable each area must be such that provision of the services in the area could be conveniently associated with the university having a school of medicine and that the Secretary of State should consult such bodies and organizations as appeared to him to be concerned.

Mr. NIALL MCPHERSON said that under the Bill a man would have the right to go to hospital and to refuse to be examined for clinical study. He asked whether the Secretary of State would have a right to say that such a man should be examined He saw no other object in the Clause because in the past the arrangements between the universities and the governing bodies of the hospitals had worked perfectly well.

Dr. STEPHEN TAYLOR felt that the English Act had a considerable advantage over the Scottish Bill in the way it treated its teaching hospitals. One desired to give the rebel in medicine the maximum opportunity for developing himself free from any supervision. However, the Secretary of State must consider the size of the medical labour force which he would require in future. He must make a decision on how many people he needed in the medical school and how much clinical teaching. He must keep the subsection so that he could say how much of his hospital service was to be devoted to supplying clinical material for teaching. He had heard it said that one of the troubles which had developed of late years in the Edinburgh School of Medicine was that it had become so popular in many parts of the world and so many people had come to Edinburgh that the ratio of students to clinical teaching in the Royal Infirmary had become increasingly unsatisfactory. The regional board might not be a desirable body for nominating teaching hospitals. The Secretary of State must take a nation-wide view in deciding.

Major LLOYD said more doctors were sent out of Scotland than were provided inside Scotland. The matter was one of world-wide importance and the amendment should be considered sympathetically.

Expanding the Teaching Hospitals

Mr. BUCHANAN said the Bill did not affect teaching at all. Teaching remained a duty of the university. The Government provided facilities for teaching but did not interfere with the historic privilege of the universities to provide the teaching. On this issue the local authorities, the British Medical Association, and the universities were broadly agreed. The only body which was against this scheme for Scotland was the British Hospitals Association. That was the only section which would not be concerned with the running of this scheme. In Scotland the teaching hospitals played a much larger part in the provision of beds than was played by similar hospitals in England. Mr. Reid had spoken of the Royal and the Western Infirmaries in Glasgow and the Royal Infirmary in Edinburgh as though they were with one or two others the only teaching hospitals in Scotland. That was wrong. In Aberdeen, for example, nearly the whole of the hospital beds for that town were provided in teaching hospitals. How could these hospitals be taken out of the scheme when they provided a greater part of the accommodation for the people? Mr. Buchanan hoped to see the teaching hospitals expanded. Doctors in ordinary practice would be required to take part in teaching work. Instead of four or five grandiose hospitals in Glasgow or Aberdeen, he wished teaching hospitals to be extended to other parts of the country. He looked forward to seeing the Falkirk hospital become a teaching hospital. Under the scheme proposed there would be discussions between the regional board and the teaching hospitals to decide who was to do substantial teaching. If another hospital, such as the one at Falkirk, came under the regional board, that board would fight to the death to keep it, and before it could be classified as a teaching hospital

it must go to the board and start a series of arguments. The Government proposed to give the universities representation on every board of management and imposed the condition that if there was a substantial amount of teaching the university should have a larger representation. The Government went further and said that the staff should be represented on the board. These proposals were more far-reaching than the English ones.

Mr. THORNTON-KEMSLEY said Mr. Buchanan had been less than fair to the British Hospitals Association, Scottish Branch. He ought to know that that Association agreed in what was proposed and thought that the Opposition went too far in suggesting that teaching hospitals should be taken out of the regional association.

Col. ELLIOT said the point in debate was not a political one. The Opposition found itself in this position because the Government were speaking with two voices. He did not think that the English solution of the problem would completely remove the difficulties, but he thought that the proposed solution in the case of Scotland would not do so either. If the university found itself in conflict with the hospital and bed accommodation was not provided for the university nominee, the university professor would be in the greatest difficulty. By 34 votes to 18 the Committee decided that subsection 2 should stand part of the Clause.

On the motion that Clause 3 stand part of the Bill, Mr. RANKIN asked whether in the term "specialists" Mr. Buchanan included medical auxiliaries or if he proposed to cover the position of these people by Regulations as had been done in the English Act.

Mr. BUCHANAN said he would endeavour to obtain an answer to this question. He remarked that owing to the terribly cold conditions in the Committee room he desired to adjourn the discussion shortly. In reply to Miss HERBISON he said that the department would have power to provide travelling costs to beneficiaries under the Bill. The specialist services would be available as part of the equipment of the hospitals. He promised to look into drafting amendments which had been suggested by Sir JOHN GRAHAM KERR.

The Committee then adjourned.

Food Rationing for Invalids

Col. STODDART-SCOTT asked on Jan. 29 the number of individuals with medical qualifications who sit on the Food Rationing (Special Diets) Advisory Committee; how many times they met during the last six months of 1946; and how many medical men were present on each occasion. Mr. STRACHEY said applications for special rations for individual patients were not taken to the committee as a whole but were sent by the secretary to at least two members of the committee, the two members most qualified to deal with the particular case. All cases raising a new point were sent to all members of the committee. This was more expeditious than attempting to convene the committee to deal with each application. The full committee met when a change of the scales of extra rations automatically available for each illness was in question. For this purpose the committee met twice during the last six months. Eight of the ten members were present at the first and nine at the second meeting. He thought it satisfactory that men who were best qualified should be consulted in the case of each particular interest (see also pp. 227 and 230).

Medical Students from Nigeria

Mr. CREECH JONES said on Jan. 29 that 381 students from Nigeria were studying in universities and medical schools in the United Kingdom. Except in the case of medical schools, where the pressure was greatest, the Nigerian Government did not send over priority lists. Of the eleven students from Nigeria who were placed in medical schools in 1946 three figured high in the priority list for that year. The remainder had been recommended in previous years but could not be placed for various reasons. Every effort was being made by letter and personal contact with university and other authorities to persuade them to allot as many places as possible to students from the Colonies. Mr. Creech Jones praised the help they had given to the Colonial Office despite their own difficulties. He added that the situation of all institutions of higher education would, owing to the claims of ex-Service students, be as difficult as it was in 1946–7.

Tuberculin Tests.—In 975,000 tests of "Attested" cattle made in 1946, 4,461 animals reacted, and in 368,000 tests of "T.T." cattle 6,734 animals reacted. In giving these figures on Jan. 27, Mr. TOM WILLIAMS added that reaction to the tuberculin test did not imply infection in the milk of a reactor.

Universities and Colleges

ROYAL COLLEGE OF PHYSICIANS OF LONDON

At a meeting of the College held on Jan. 30 the following resolution was passed: The College desires the Negotiating Committee to enter into discussions and negotiations with the Minister on the Regulations authorized by the National Health Service Act.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Monthly dinners will be held in the College for Fellows and Members of the College, members of the associations linked to the College through the joint secretariat, and their wives and guests, on Wednesdays at 7 p.m., Feb. 12, March 12, April 9, May 7, June 11, and July 9, at an inclusive charge of £1 1s., which must be sent with the application to the assistant secretary of the College at least a week before the date of the dinner.

Geoffrey H. Bourne, D.Phil., D.Sc., has been appointed to the Readership in Histology tenable at the London Hospital Medical College and *not* Geoffrey Bourne, M.D., F.R.C.P., as announced in the *Journal* of Feb. 1 (p. 204).

Medical News

The next meeting of the Zoological Society of London for scientific business will be held on Tuesday, Feb. 11, at 5 p.m.

A joint meeting of the Royal Society of Medicine and the Scientific Film Association will be held at 1, Wimpole Street, London, W., on Wednesday, Feb. 12, at 4 p.m., when the general subject for discussion will be "The Use of Filmstrip in Medical Teaching."

A meeting of the Royal Sanitary Institute will be held at 90, Buckingham Palace Road, S.W., on Wednesday, Feb. 12, at 2.30 p.m., when there will be a discussion on "Recent Advances in the Treatment of Sewage by Biological Filtration" to be opened by Dr. B. A. Southgate.

A lecture on "Some Chemical and Pharmaceutical Aspects of Anaesthesia" will be given by Dr. H. Davis before the Pharmaceutical Society of Great Britain (17, Bloomsbury Square, W.C.) on Thursday, Feb. 13, at 7 p.m.

A joint meeting of the Tuberculosis Association with the Section of Anaesthetics of the Royal Society of Medicine will be held at 26, Portland Place, London, W., on Friday, Feb. 14, at 3.30 p.m., when there will be a discussion on "Anaesthesia for Major Thoracic Surgery in the Tuberculous," to be opened by Mr. A. L. d'Abreu, Dr. I. W. Magill, and Dr. Joan Millar.

The Ministry of Supply announces that a further disposal sale will be held at the Ministry's Depot No. 83, Otley, on Tuesday, Feb. 11, and will include a quantity of medical equipment, namely, first-aid haversacks, A.R.P. first-aid boxes, a surgery box, bandages, absorbent gauze, plain wound dressings, calamine lotion, surgical scissors, forceps, white basins, splints, stretchers, and tourniquets. Further information and catalogues can be obtained from the auctioneers, Messrs. Dacre, Son, and Hartley, Station Road, Otley. (Tel.: Otley 2251.)

Dr. A. C. Monkhouse, Deputy Director of Fuel Research, speaking on Jan. 15 at the Royal Institute of Chemistry, said that about 2.3 million tons of smoke were produced in Britain every year—one-half of that from domestic grates. Pollution by oxides of sulphur amounted to about 5 million tons per year, of which one-fifth came from domestic fires burning raw coal. The Atmospheric Pollution Research Committee of the Fuel Research Board was investigating the problem, and had developed apparatus being used by local authorities. More efficient appliances and the use of smokeless fuel would reduce domestic smoke, but no satisfactory method of reducing sulphur dioxide pollution had been developed.

A circular from the Ministry of Health points out that streptomycin is not yet generally available in Britain, but clinical trials are being carried out by the Medical Research Council; and it repeats the warning given in our annotation (Dec. 14, 1946, p. 906) that in the small number of patients with tuberculous meningitis whose lives have been prolonged by treatment with this drug permanent mental derangement, blindness, or deafness has nearly always ensued.

A British medical commission headed by Lord Moran is visiting Nüremberg to study the results of experiments carried out by German scientists on the inmates of concentration camps.

No. 3

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Jan. 18.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each Infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1947 (a)	(b)	(c)	(d)	(e)	1946 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	58	6	31	2	1	62	6	44	2	2
Deaths		2	—				2	4		
Diphtheria	256	18	78	40	10	478	41	135	63	28
Deaths	5	—	1		—	2	—	3	1	—
Dysentery	72	4	17	1	—	371	20	75	—	—
Deaths					—				—	—
Encephalitis lethargica, acute	1	—	1	—	—	2	—	—	—	—
Deaths		1					—			
Erysipelas			48	5	3			63	11	4
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				39					9	
Deaths	96	13	14		—	61	5	4	10	1
Measles*	11,087	378	276	61	890	726	109	105	112	4
Deaths	15	—	1		3	1	—	—	1	—
Ophthalmia neonatorum	69	6	21	—	2	51	4	9	—	—
Deaths										
Paratyphoid fever	6	—	2(B)	—	—	1	1	2(A)	—	—
Deaths	—	—	—		—	—	—	—	—	—
Pneumonia, influenzal	1,223	73	53	13	6	1,310	85	85	10	11
Deaths (from influenza)†	85	13	23		—	174	23	30	3	6
Pneumonia, primary			413	30				510	22	
Deaths		94			14		73		16	20
Polio-encephalitis, acute	1	1				—	—			
Deaths		—					—			
Poliomyelitis, acute	9	2	—	15	—	6	—	—	2	—
Deaths		—					—			
Puerperal fever		2	12		1		3	5		—
Deaths										
Puerperal pyrexia‡	153	9	31	1	—	131	14	10	1	—
Deaths		—					1			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,226	106	276	22	29	1,331	131	214	26	36
Deaths	—	—	—		—	1	—	—	—	—
Smallpox	—	—	—	—	—	1	—	—	—	—
Deaths					—				—	—
Typhoid fever	4	—	2	4	—	3	—	3	2	1
Deaths	1	—	—		—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths					—				—	—
Whooping-cough*	2,192	158	488	107	62	1,251	117	79	19	10
Deaths	18	—	7		2	6	1	4	—	—
Deaths (0–1 year)	622	81	72		9	458	62	65	32	21
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	6,579	1056	785		155	6,152	971	827	232	185
Annual death rate (per 1,000 persons living)			17·3					18·8	14·9	
Live births	10,628	1721	1260		269	6,792	1008	802	372	233
Annual rate per 1,000 persons living			25·3					16·0	23·8	
Stillbirths	291	32	29			226	37	25		
Rate per 1,000 total births (including stillborn)			22					30		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

It is still not possible to publish the return of births and deaths for Eire for the weeks ended Oct. 26, Nov. 2, 9, 16, 23, 30, Dec. 7, 14, 21, 28, 1946; Jan. 4, 11, and 18, 1947.

EPIDEMIOLOGICAL NOTES

Measles and Influenza

The two conditions which are of the greatest epidemiological interest at the moment are measles and influenza. Both are the subject of leading articles elsewhere in this issue (see pp. 225 and 226).

Measles was epidemic in 1945 and a comparison of the notifications in the 126 great towns for the first four weeks of this year and the two preceding years is interesting.

	1st Week	2nd Week	3rd Week	4th Week
1945 ..	11,947	10,979	12,054	12,941
1946 ..	771	777	726	907
1947 ..	10,823	10,223	11,087	11,671

Influenza is not notifiable, but a comparison of the recorded deaths from influenza in the 126 great towns in the first four weeks of this year and the two preceding years gives no indication of a major influenza epidemic.

	1st Week	2nd Week	3rd Week	4th Week
1945 ..	55	72	56	87
1946 ..	123	165	174	273
1947 ..	36	74	85	92

Discussion of Table

In *England and Wales* the common infectious diseases of childhood were more prevalent. There were increases in the notifications of measles 864, whooping-cough 264, scarlet fever 168, and diphtheria 24. The only decreases in incidence were acute pneumonia 41 and dysentery 15.

The largest increases in the notifications of measles were Warwickshire 279, Lancashire 224, Sussex 127, and London 87. The largest decreases were recorded at Durham 104, and Nottinghamshire 74. The rise in cases of whooping-cough was most pronounced in the northern section of the country, notably in Yorkshire West Riding 57 and Lancashire 42.

A small rise in the incidence of scarlet fever was recorded throughout the country, and the only increase of any size was London 25. The notifications of acute pneumonia decreased slightly in the south and rose slightly in the north.

There were 19 cases of dysentery in Lancashire, Preston R.D., compared with 8 in the preceding week, and 5 further cases of dysentery were recorded in the outbreak in Hertfordshire, St. Albans R.D., where 24 cases were notified last week.

In *Scotland* a decrease occurred in the notifications of measles 169 and acute primary pneumonia 42, while rises were reported for whooping-cough 23, diphtheria 18, and scarlet fever 10.

In *Eire* a rise occurred in the incidence of measles 27, diphtheria 22, and diarrhoea and enteritis 11; decreases were recorded for whooping-cough 21 and primary pneumonia 11. The rise in cases of diphtheria was mainly contributed by Cork, Kanturk R.D., where an outbreak involving 10 persons was reported. Whooping-cough declined in Dublin C.B. by 24 cases, but a fresh outbreak with 16 cases was reported from Louth, Dundalk U.D.

In *Northern Ireland* the outbreak of measles in Belfast C.B. flared up, the notifications rising from 755 to 889.

Health of Glasgow

The birth rate in Glasgow during 1946 was 22.4 per 1,000, the highest rate for twenty years. The infant mortality was 67 per 1,000 births and was one below the record low level of the preceding year. The general death rate was 13.8 per 1,000, being 0.7 higher than last year. The principal causes of death were pulmonary tuberculosis 1,173, pneumonia 709, influenza 161, and other respiratory diseases 505; these were 95, 161, 115, and 64 respectively in excess of last year's totals. There were 39 deaths attributed to diphtheria, 7 more than in 1945. Deaths from infantile diarrhoea and enteritis numbered 296, compared with 396 in 1945 and 698 in 1944.

Week Ending January 25

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,286, whooping-cough 2,151, diphtheria 247, measles 11,671, acute pneumonia 1,270, cerebrospinal fever 94, dysentery 97, paratyphoid 1, typhoid 6. Deaths from influenza in the 126 great towns numbered 92.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Sodium Morrhuate Injections

Q.—*In two patients with varicose veins injections below the knee of 2 ml. of 5% sodium morrhuate were followed by a "fainting feeling," pain in the ankle, and severe headache. What is the explanation?*

A.—The Council on Pharmacy and Chemistry of the American Medical Association recommended withdrawal of the 10% solution of sodium morrhuate from accepted remedies (*J. Amer. med. Ass.*, 1942, **119**, 498). This was on the basis of reports of ill-effects from use of the 5% solution, and much more marked ill-effects from the 10% solution. Dale, M. L. (*J. Amer. med. Ass.*, 1937, **108**, 718), reported the sudden development of vertigo, faintness, bradycardia, and cyanosis of the extremities without anaphylactic symptoms after injection of the 5% solution in a case which had received repeated injections previously. He considered the reaction specific and attributed it to idiosyncrasy. The symptoms were not anaphylactic in nature and there was no period of cessation of treatment during which the patient could have become sensitive. Previous reports of ill-effects following sodium morrhuate injections for varicose veins had been attributed to anaphylaxis. K. M. Lewis (*J. Amer. med. Ass.*, 1936, **107**, 1298) found urticarial rashes at the site of injection and sometimes severe allergic reactions followed by collapse. During a first course of treatment there seemed to be no reactions, but after an interval anaphylaxis occurred. He concluded that people subject to allergic disease should not receive sodium morrhuate at all.

Similarly G. A. Holland (*Canad. med. Ass. J.*, 1939, **41**, 262) reported three severe cases of allergic reactions following the drug—nausea, cyanosis, fainting, and severe shock occurring with the first dose of sodium morrhuate after an interval in treatment. "The lesson is one of caution in the use of the mixture of saponified fatty acids of cod-liver oil known as sodium morrhuate at the beginning of treatment, but especially in patients who have received the same solution previously after a sufficient time has elapsed to allow for the development of a foreign protein sensitivity." It is recommended that the initial dose should be 0.5 ml. and that after an interval in treatment an intradermal test be made. P. Clarkson (*Lancet*, 1938, **2**, 69) states: "Sodium morrhuate is the least harmful of sclerosing agents but 5% of cases have morrhuate sensitivity." There may be immediate and profound collapse; more often there is a diffuse eczematoid skin reaction which lasts two to four weeks and itches intensely. Praver, L. L., and Becker S. W. (*J. Amer. med. Ass.*, 1935, **104**, 997), found that 7 out of 176 patients treated with the drug had reactions, mostly urticarial, not necessarily at site of injection. One had weakness for two days. The protein content of a 20-ml. sample was too small to be determined, but the total nitrogen was 0.037 g./litre; assuming that it is all protein nitrogen the protein content would be 0.25 g./litre—not enough to produce sensitization. But sodium morrhuate may act as a haptene and sensitize susceptible individuals. The eventual production of a nitritoid crisis in one patient emphasizes the desirability of changing the nature of the drug used for injecting varicose veins at the first sign of hypersensitivity.

Death from Cocaine or Adrenaline

Q.—*A girl of 17 received an injection of 1% cocaine in adrenaline solution. She collapsed and died. Subsequently it was discovered that the solution had been made up in error with 1/1,000 instead of 1/10,000 adrenaline. It is estimated that 1½ to 2 ml. was injected. What is the bearing of this large dose of adrenaline on the cause of death, which had been certified as an idiosyncrasy to cocaine?*

A.—If as much as 2 ml. of the solution was injected the amount of cocaine received by the patient was 20 mg., and toxic symptoms (though not death) have been recorded from this amount on previous occasions. It is not possible to be sure what bearing the large dose of adrenaline had on the effect of the cocaine. The cocaine might have arrested the heart by prolonging the refractory period and depressing conduction. This effect is antagonized by adrenaline, which shortens the refractory period. Cocaine usually causes convulsions as its chief toxic effect, but as there is no mention of this it presumably did not occur here. Cocaine appears sometimes to arrest the respiration by a curare-like action on the endings of the motor nerves; this action is also antagonized by adrenaline. On the whole, if the death was due to cocaine, the large dose of adrenaline would lessen the likelihood of death occurring.

Was death due to the large dose of adrenaline? It is unlikely that this dose would produce death by an action on the cardiovascular system of a girl of 17. This might occur in a woman of 47 or older, but not in one whose heart and vessels were presumably healthy. Adrenaline in a large dose may, however, arrest the respiration, causing apnoea, and its effect would be intensified and prolonged by the cocaine. On the whole this seems the most probable explanation of the death. This case is an illustration of the danger of using cocaine for injection. It should be used only in the eye or for superficial application to mucous surfaces.

Legality of Intrauterine Contraceptives

Q.—*It would be of interest to have an authoritative opinion as to the legality of the gold wishbone and Gräfenberg ring contraceptive appliances. They would appear to permit fertilization of the ovum and then either prevent subsequent implantation or (Nov. 9, 1946, p. 721) "act by inducing early abortion." Since, presumably, a woman is "pregnant" at any time following fertilization of the ovum it would appear that any interference after this moment, except on therapeutic grounds, is an offence against section 58 of the Offences against the Person Act, 1861. This statute also makes it an offence to administer any "noxious thing" with intent to procure a miscarriage, even if the woman is not pregnant; this might be held to include the fitting of such an appliance before there was any chance of a pregnancy having occurred.*

A.—On the purely legal side, if a woman were prosecuted for the use of such an appliance the Crown would have to prove that she had been pregnant and had miscarried through using the appliance. The difficulty is obvious. If a retailer were prosecuted the difficulty would be less, because the Crown would have to prove only that he had supplied the appliance with intent to procure miscarriage. Proof could only be given, however, by medical evidence that the action of the appliance was to induce abortion, and unless this evidence convinced the jury beyond reasonable doubt the accused could not be convicted. As the evidence must be largely speculative, the prosecution would not be likely to succeed.

Treatment of Post-operative Thrombo-phlebitis

Q.—*Nine days after operation for a leaking luteal cyst a woman aged 25 developed phlebitis of the left popliteal and femoral veins. This was treated for five weeks with absolute rest, but at the end of this period the veins were still tender and oedema of the leg and thigh was still pronounced. The phlebitis then spread to the right femoral vein with marked oedema. Tenderness of the lower abdomen has been constant throughout, but that over the femoral and popliteal veins is now only slight. Please advise as to prognosis and further treatment.*

A.—The sudden extension to the right leg is thought to be due to the clot extending up to the confluence of the common iliac veins, and might have been prevented by dicoumarol treatment started at the first sign of thrombosis; especially as the patient was so young for this condition; possibly an injection of the lumbar ganglia at the same time would have been valuable. The prognosis is good as regards life; such a case is unlikely now to have a pulmonary embolism. The legs, however, will have a disorganized venous circulation for life, and will swell and may become eczematous and ulcerated in the usual situations, possibly after a lapse of as long as twelve

or more years. To prevent these sequelae the patient should be advised to wear leg supports when she gets up—elastic bandages at first, and stockings later when the tendency to swell is less marked. Immediate treatment with dicoumarol should be started, 300 mg. on the first and 200 mg. on the second and third days, with an estimation of the prothrombin time on the fifth day, and the drug should thenceforth be administered with the object of maintaining for six weeks a 120% increase in the prothrombin time. The patient should get up when swelling in both legs has subsided, and "elastoplast" or Unna's paste bandages should be worn from the knee down for the first month.

Antisyphilitic Treatment in Pregnancy

Q.—*Should a previously infected woman receive antisyphilitic treatment throughout each pregnancy regardless of negative Wassermann reactions in order to avoid the possibility of producing a congenitally syphilitic child? In view of the large numbers of men who have contracted this disease while in the Services, what risk is there of one of these men, now pronounced cured, fathering a congenital syphilitic child?*

A.—A woman who has been infected with syphilis should invariably receive antisyphilitic treatment during each subsequent pregnancy even if her blood shows a negative Wassermann reaction because (1) such a test is not in itself proof of cure; (2) she *may* infect the foetus if she still harbours spirochaetes however old her infection and however much previous treatment she has had; and (3) the inconvenience of treatment is as nothing compared with the tragedy of producing a syphilitic baby.

A man who contracted syphilis while in one of the Services who was treated (adequately) and pronounced cured is extremely unlikely to father a congenitally syphilitic child because it would be necessary for him first to infect his wife; this is improbable not only because he has been treated and has passed tests of cure but also because the older the husband's infection the less likely is it to be conveyed to the wife; after two years a man is unlikely to be contagious, and after four years is almost certainly not so, assuming he has been symptom-free for those periods. This latter applies when treatment has not been given and still more so when it has; most Service men were treated very adequately during the war, in fact probably much more so than they would have been had they been civilians.

It is hardly correct to speak of the large numbers of Service men who contracted syphilis during the war, in fact the numbers of British soldiers infected were relatively small, at any rate compared with other nations. (See also Oct. 5, 1946, p. 521.)

Remote Risk of Contracting Tuberculosis

Q.—*Is it safe for a child of 3 to stay in a house where a patient was nursed for five years with open tuberculosis and died three months before the child's visit?*

A.—It would be very unlikely that any harm could result from a child staying in a house three months after the death of a patient suffering from pulmonary tuberculosis, provided that the usual precautions had been taken to disinfect the mattress and bed-clothes, that the personal belongings of the patient which were in constant use had been removed, and that the room had been thoroughly cleaned. The tubercle bacillus is rapidly killed by direct sunlight and it would not survive if there were good ventilation and a reasonable amount of sunlight entering the house. It is difficult to find the tubercle bacillus even in the dust from tuberculosis hospital wards, so that the likelihood of contracting tuberculosis from living in a house three months after the death of a patient is remote.

Vitamin H

Q.—*What is vitamin H? Has it any effect on alopecia or on baldness? Is it sold under some branded name in this country?*

A.—Vitamin H is the same as biotin. So far as the writer is aware no work has been published on its effect on baldness and alopecia. It is not sold under branded names in this country; in fact it is still only obtainable in very small amounts.

Letters and Notes

Endogenous Depression in General Practice

Dr. A. S. ELLIS (Napsbury Hospital) writes: Many will agree with Dr. A. Lionel Rowson's implications (Jan. 18, p. 111) that conditions in some mental hospitals are far from ideal; one feels, however, that Dr. Rowson displays regrettable ignorance concerning present-day methods of psychiatric investigation and treatment. With regard to Dr. Sheldon's cases (quoted by Dr. Rowson) it is a safe bet that, in the unlikely event of a magistrate's making a reception order for these patients, the organic nature of their illnesses would have been discovered during their first week in a mental hospital. Modern psychiatrists are fully alive to the possibility of organic disease, and it is not correct to say, as does Dr. Rowson, that "most of the patients' complaints are invariably put down to imagination and persecution mania." Diagnostic errors such as those against which Dr. Rowson inveighs would be more often avoided if general practitioners more frequently adopted the course outlined by Dr. L. Sheldon (Jan. 4, p. 33), and submitted to radiography all cases of dyspepsia of over four weeks' duration. By such ordinary precautions could the general practitioner spare his patient months of discomfort and himself the humiliation of having cases referred back by the psychiatrist with a tactfully worded suggestion that an organic investigation be carried out.

Dr. WILLIAM SARGANT (Sutton Emergency Hospital) writes: Dr. C. A. H. Watts's suggestion in his article (Jan. 4, p. 11) that many of the less severe cases could be treated with out-patient E.C.T. has proved correct. He mentions American work along these lines, but out-patient E.C.T. has also been done in London hospitals since 1941. I have used it for over four years and the results have been most gratifying. Many patients have been saved months of misery and incapacity. Careful selection of cases is important. I find that in 1946 there were 113 patients referred to the out-patient E.C.T. clinic at the West End Hospital for Nervous Diseases, of which only 45 were treated, and in 1945 the figures were 35 out of 89. The high rejection rate was accounted for in part by neurotics and schizophrenics and by those needing hospital supervision during treatment. There has been hesitation in many parts of the country in starting this method. Patients have had to travel to London from as far afield as Dorset each week for treatment to avoid admission to a mental hospital. Any risks inherent in out-patient E.C.T. are easily counterbalanced by the tragedies involved in leaving such patients untreated. Before the war it was statistically predicted that 90,000 people living in the area of Greater London alone would eventually die by their own hand. Many such suicides are severe examples of the much greater number of depressions who suffer prolonged invalidism without mental hospital admission.

Doctors' Wives and the Act

Dr. P. E. R. KIRBY (Brighton) writes: May I suggest that when the Negotiating Committee get into action a thought might be given to that unfortunate person, the doctor's wife without domestic help. When the State Medical Service comes into being I visualize knocks at the door and rings on the telephone all day and half the night. The so-called better-class State patients will not be content to await their turn in the surgery but will demand preferential treatment. As far as I can see, as the Act now stands we shall lose our practices, perhaps our homes, and possibly our wives.

Yellow Fever Inoculation Centres

The Department of Health for Scotland has arranged to set up centres where inoculation against yellow fever may be obtained free of charge by people intending to travel to or through areas where that disease is prevalent. Certificates of inoculation approved by the Government will be issued from the centres. The addresses are: Dr. W. R. Logan, Bacteriological Department, Royal Infirmary, Lauriston Place, Edinburgh 3; The Medical Officer of Health, 20, Cochrane Street, Glasgow, C.1; Dr. J. Smith, City Hospital Laboratory, City Hospital, Urquhart Road, Aberdeen.

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